



UNDP Project Document

Governments of Indonesia, Malaysia, Philippines

United Nations Development Programme

Implementation of the

Sulu-Celebes Sea Sustainable Fisheries Management Project

Brief Description

The Sulu-Celebes Sea (SCS) is a Large Marine Ecosystem in the tropical seas of Asia bounded by three countries – Indonesia, Malaysia and the Philippines. Being at the heart of the most bio-diverse marine area in the world, the SCS is also a very rich fishing ground for large and small pelagic as well as bay and coral reef fishes, providing livelihoods to the coastal inhabitants and food for the entire region and beyond. The fishery resources, however, have declined due to various threats, including overexploitation, habitat and community modification and global climate change. The goal of the Project is to have an economically and ecologically sustainable marine fisheries in the SCS, for the benefit of communities who are dependent on these resources for livelihood and for the global community who benefit in the conservation of highly diverse marine ecosystems and its ecosystems services. The objective of the Project is to improve the condition of fisheries and their habitats in the SCS through an integrated, collaborative and participatory management at the local, national and tri-national levels. The three countries and other stakeholders, including NGOs, have worked together to develop the Sulu-Sulawesi Marine Ecoregion Conservation Plan and formally put in place a regional institutional mechanism to implement the plan. The Project activities, outcomes and outputs will build on these strong regional and national initiatives. There are five major outcomes of the Project. The first is the achievement of a regional consensus on trans-boundary priorities and their immediate and root causes by updating an earlier Trans-boundary Diagnostic Analysis for the SCS and focusing on unsustainable exploitation of fisheries. The second outcome is agreement on regional measures for improved fisheries management through coordination in the formulation of a Strategic Action Program, which will build on the existing Ecoregion Conservation Plan. The third outcome is the strengthening of institutions and introduction of reforms to catalyze implementation of policies on reducing overfishing and improving fisheries management. The primary target for institutional strengthening is the Sulu-Sulawesi Marine Ecoregion Tri-National Committee and its Sub-Committees, in particular the Sub-Committee on Sustainable Fisheries. The fourth outcome is increased fish stocks of small pelagics through the implementation of best fisheries management practices in demonstration sites. The fifth outcome is the capture, application and dissemination of knowledge, lessons and best practices within the SCS and other LMEs.

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List of Acronyms

ADB	Asian Development Bank
ASEAN	Association of Southeast Asian Nations
BFAR	Bureau of Fisheries and Aquatic Resources (Philippines)
BIMP-EAGA	Brunei-Indonesia-Malaysia-Philippines East Asia Growth Area
CI	Conservation International
COBSEA	Coordinating Body on the Seas of East Asia
CPUE	Catch per Unit Effort
CTI	Coral Triangle Initiative
CTI CFFC	Coral Triangle Initiative on Coral Reefs, Fisheries and Food Securities and Adaptation to Climate Change
CT6	Coral Triangle (6 countries)
DOF	Department of Fisheries, Sabah
ECP	Ecoregion Conservation Plan for SSME
FAO	Food and Agriculture Organisation, United Nations
GEF	Global Environment Facility
GIWA	Global International Waters Assessment
IMP	Indonesia, Malaysia, Philippines
LME	Large Marine Ecosystem
MMAF	Ministry of Marine Affairs and Fisheries (Indonesia)
NPOA	National Program of Action for CT countries
PEMSEA	Partnerships in Environmental Management for the Seas of East Asia
PMU	Project Management Unit
PPG	Project Preparation Grant
RPOA	Regional Program of Action for CT countries
RPM	Regional Program Manager
SAP	Strategic Action Program
SEAFDEC	Southeast Asian Fisheries Development Center
SCS	Sulu-Celebes Sea Large Marine Ecosystem
SCS-SFM	Sulu-Celebes Sea Sustainable Fisheries Management Project
SSME	Sulu-Sulawesi Marine Ecoregion
TDA	Transboundary Diagnostic Analysis
TNC	The Nature Conservancy

UNDP	United Nations Development Program
USAID	United States Agency for International Development
WWF	World Wide Fund for Nature

SECTION I: ELABORATION OF THE NARRATIVE

PART I: Situation Analysis

Context and global significance

Sulu-Celebes Sea Large Marine Ecosystem

1. The Sulu-Celebes Sea¹ (SCS) is a Large Marine Ecosystem² (LME) in the tropical seas of Asia, containing a geographically distinct assemblage of natural communities that share a large number of common species, dynamics, and conditions³. The SCS is a semi-enclosed LME with an area of 900,000 km², and is composed of two marine basins – the Sulu Sea and the Celebes-Sulawesi Sea. The two marine basins are separated by the Tawi-Tawi Ridge but are interconnected by the movement of marine waters⁴. The Pacific Ocean flows into Sulu Sea in northern Mindanao and between Sangihe-Talaud Archipelago, North Sulawesi. Surface waters from one basin overflow to the other every two weeks and through-flows through the Tawi-Tawi-Sulu Archipelago occur during monsoons. An internal wave moves back and forth from the Tubbataha Ridge towards the east coast of Palawan Island.

2. The dynamic movement of marine waters in the Sulu-Celebes Sea circulates rich nutrients and larval stages of many marine species across political boundaries. The upwelling along the northwestern edge of the Tawi-Tawi Ridge enriches surface waters that are exchanged between Sulu and Sulawesi Seas and are circulated around by monsoonal winds. The circulation of waters explain the export of larvae from a spawning ground to distant settlement habitats, e.g., from Tubbataha Reef to Palawan Island and Sabah, north Borneo, from Surigao to Bohol Sea.

3. The direction of transport of nutrients and larval stages varies with the monsoons⁵. During the northeast monsoon, the waters from the Pacific Ocean enter Sulu Sea north of Mindanao and divide into two – one moving northward towards Mindoro Island and exiting to the South China Sea, and the other moving southward and clock-wise to Tawi-Tawi, east coast of Sabah, and exiting through Balabac Strait to the South China Sea. In Sulawesi Sea, the marine waters enter Makassar Strait and move in a clockwise direction to Sulawesi Island and

¹ In this document the Sulu-Celebes Sea (SCS) LME is synonymous to the Sulu-Sulawesi Sea Marine Ecoregion (SSME). Celebes Sea is the body of water in the territory of the Philippines and Sulawesi (or Celebes) Sea is the body of water bounded by Indonesia, Malaysia, and the Philippines. SCS is the acronym used in this document except where reference is made to the Tri-National Committee where SSME is used. The SSME Tri-National Committee was created through an intergovernmental memorandum of understanding which has been ratified by the three countries.

² LMEs are relatively large regions on the order of 200,000 km² or greater, characterized by distinct: (i) bathymetry, (ii) hydrography, (iii) productivity, and (iv) trophically dependent populations (<http://www.lme.noaa.gov/Portal/>). LMEs are largely conceived as units for the practical application of transboundary management issues (fish and fisheries, pollution, habitat restoration, productivity, socioeconomics, and governance). The LME system focuses on productivity and oceanographic processes.

³ Sherman, K. and L. M. Alexander. (eds) 1986. Variability and Management of Large Marine Ecosystems. Boulder. Westview Press.

⁴ Dumaup, N., R. M. Cola, R. M. Trono, J. A. Ingles, E. F. B. Miclat, and N. Ibuna. (eds.) 2003. Conservation Plan for the Sulu-Sulawesi Marine Ecoregion. Philippines: World Wide Fund for Nature – Sulu-Sulawesi Marine Ecoregion. 168 pp. The Ecoregion Conservation Plan for the Sulu-Sulawesi Marine Ecoregion has been prepared by the stakeholders of the SSME, Technical Working Groups of Indonesia, Malaysia, and the Philippines, and the WWF-SSME Conservation Program Team. 2003.

⁵ Wyrkti, K. 1961. Scientific results of marine investigations of the South China Sea and the Gulf of Thailand, 1959-1961. NAGA Report 2. Scripps Institute of Oceanography, La Jolla, CA.

Kalimantan, Borneo. During the southwest monsoon, the Pacific Ocean still influences the circulation of surface waters in the Sulu-Celebes Sea LME. Surface waters in the Sulawesi Sea move in a counter-clockwise direction and flow through Tawi-Tawi-Sulu Archipelago to the Sulu Sea. In the Sulu Sea, surface waters circulate in a counter-clockwise direction towards Mindoro Island; part of this water moves to the South China Sea and a part continues southward along Palawan Island and through Balabac Strait to the South China Sea. There is no through-flow between the Sulawesi and Sulu Seas during August.

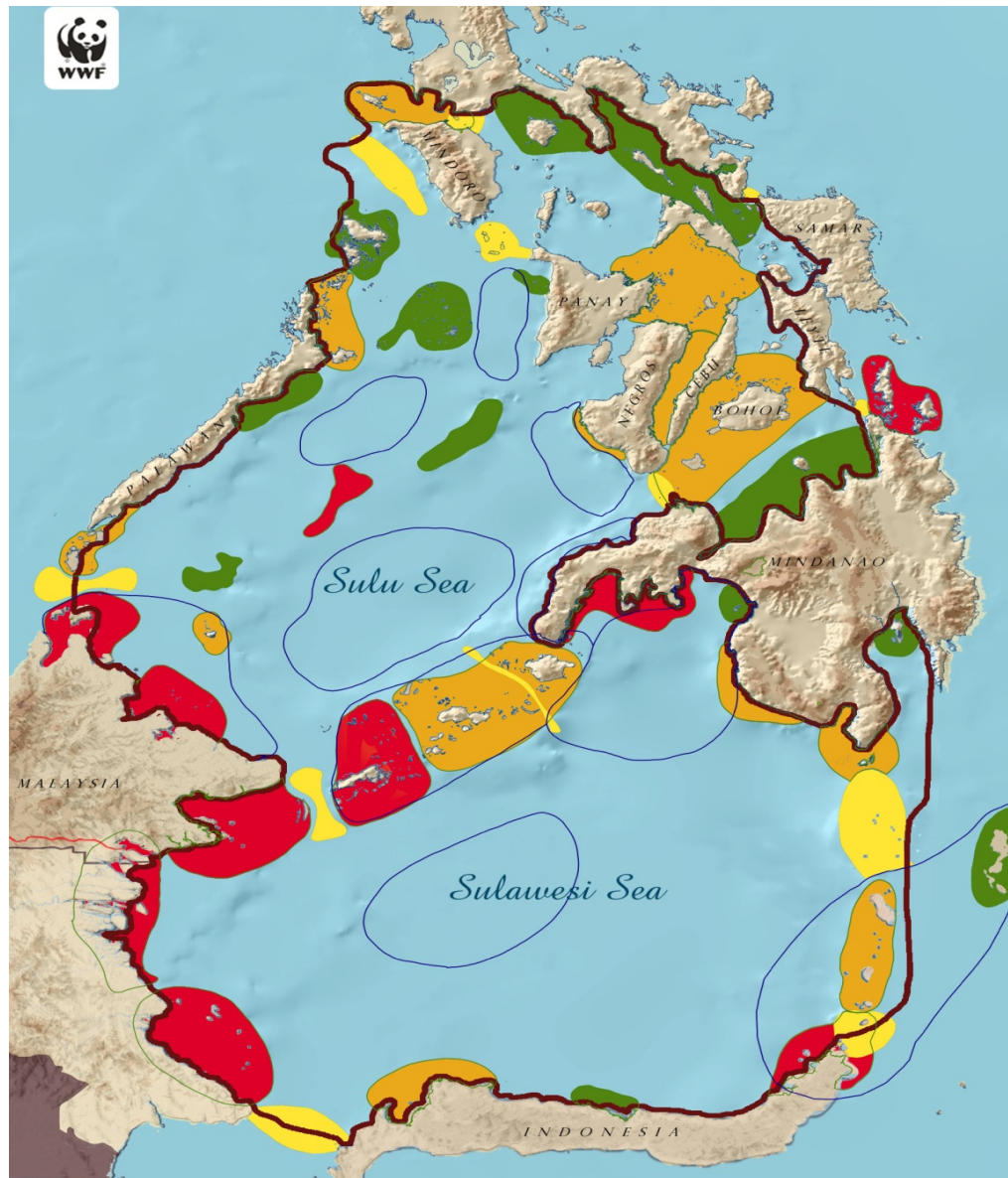


Figure 1. The Sulu-Celebes Sea Large Marine Ecosystem, showing the identified Priority Conservation Areas (colored areas). The red areas are important in the Indo-Pacific Region. The amber areas are important in the SCS. The green areas are important in the sub-region (either Sulu or Sulawesi Sea). This map is an output of the biodiversity visioning workshops with stakeholders of Indonesia, Malaysia, and Philippines, under the ecoregional planning for the Sulu-Sulawesi Marine Ecoregion facilitated by WWF in 2000.

4. The SCS LME is surrounded by more than 300 watersheds that are linked to the marine ecosystem by rivers. The main rivers that flow into the Sulu Sea are the Sapi, Segama, and Kinabatangan Rivers in Sabah, Borneo. The main rivers that flow into the Sulawesi Sea are the Merotai, Balung, and Tawau, Mindanao River (Rio Grande River), Kayan and Berau River, Kalimantan, Borneo and Dumoga, Tundano, Polgar, and Buol Rivers along Sulawesi Island. These rivers affect the productivity of the LME with land-based nutrients and pollutants from large-scale agricultural plantations in Sabah and Kalimantan and industries in Mindanao.

Global Significance and Importance

5. The marine ecosystems and species of the Sulu-Celebes Sea are representative of the highly diverse and globally significant Indo-Pacific Biological Province^{6,7}. There are 400 species of algae, 19 species of mangrove plants, 5 (of 7) marine turtles, 15 species of sea snakes, 2,500 marine fishes, 10 shorebirds resident in mangroves and 25 migratory birds (16 families), and 22 marine mammals.

6. The SCS is at the apex of the Coral Triangle – the marine area with the highest number of coral species in the world. At the southeast corner of the Coral Triangle are the Bismarck-Solomons Marine Ecoregion and, at the base of the triangle, the Indonesian Sea LME. There are over 500 species of corals found in the SCS LME. The countries of the Asia Pacific Economic Cooperation (APEC) declared in 2006 in Sydney, Australia their commitment to conserve its marine diversity and ecosystem services by building on the existing institutional foundations in the SSME.

7. The biodiversity of the Sulu-Celebes Sea LME is globally important. The Sulu-Sulawesi Marine Ecoregion is one of the Global 200⁸ Priority Regions identified by the World Wide Fund for Nature (WWF) in the 1990s. It is one of few marine ecoregions in the world with a regional conservation plan ratified by the governments to conserve the full range of biodiversity over a large geographic area.

Productivity

8. The productivity of the waters is moderate and typical of tropical seas. The productivity of surface waters in center of Sulu Sea ranges from 0.28 to 0.5 mg/cu.m⁹. Primary production was estimated at 120 gCm²/yr¹⁰ to 300 gCm²/yr¹¹. The upwelling of nutrients and the inflow of nutrients from land increase the productivity of the Sulu-Celebes Sea. The productivity of Sulu Sea is higher than South China Sea due to episodic increase in phytoplankton production during

⁶ Roberts, C.M., C.J. McClean, J.E.N. Veron, J.P. Hawkins, G.R. Allen, D.E. McAllister, C.G. Mittermeier, F.W. Schueler, M. Spalding, F. Wells, C. Vynne, and T.B. Werner. (2002). Marine biodiversity hotspots and conservation priorities for tropical reefs. *Science*, 295, 1280-1284.

⁷ Cheung, C. P. S., P. M. Alino, A. J. Uychiaco, and H. O. Arceo., 2002. Marine Protected Areas in Southeast Asia. ASEAN Regional Center for Biodiversity Conservation, Department of Environment and Natural Resources, Philippines.

⁸ WWF has identified ecoregions in terrestrial, freshwater, and marine ecoregions around the world as priorities for conservation. WWF and The Nature Conservancy has assessed and identified 200 most biologically distinct ecoregions – the Global 200 – and conducted detailed regional assessments in these ecoregions. (<http://www.worldwildlife.org/science/ecoregions>.)

⁹ Jones, I. 2002. The primary production in the Sulu Sea. *Proc. Indian Acad. Sci.* 111(3):209-213.

¹⁰ Iverson, R. L. 1990. Control of marine fish production. *Limnol. Ocean.* 35:1593-1604.

¹¹ Heilemann, S. VII-16: Sulu-Celebes Sea LME # 37 (<http://www.lme.noaa.gov>)

monsoons¹². The primary productivity of SCS also compares well with the global oceanic productivity of 140 gCm²/yr¹³.

Fish and fisheries

9. The marine capture fisheries in the Sulu-Celebes Sea are based on a mixed group of species¹⁴. There is a high catch percentage in the reported total catch in 2005 for coastal fishes (23 percent), large pelagic fishes (32 percent), small pelagic such as herrings, sardines and anchovies (23 percent), and crustaceans (7 percent). The number of species commonly caught in the trawls can be as many as 60 species of demersal fishes¹⁵. The species in the small pelagic fisheries are anchovies, herrings, scads, and mackerels and as many as 15 species are common and dominant in the landings¹⁶.

10. The marine fisheries landings indicate the productivity of the area. Small pelagic fishes are mostly filter-feeders, feeding on plankton, and accounted for about 30 percent of the total landings in 2004¹⁷. The estimate for fish production in 1995 was 800,000 tons/year or 7 gm m²/year in the Sulu Sea¹⁸. The FAO 10-year trend shows an increase in the total catch, from 750,000 tons in 1990 to 850,000 tons in 1999 in Sulu Sea alone¹⁹. The landings in 2004 from the Sulu-Celebes Sea LME have reached 1 million tons in 2004 and are likely unsustainable at the present rate of exploitation, especially in Sulu Sea. The stock-catch status in the LME indicates that half the stocks have collapsed or are currently over-exploited and that landings are from overexploited stocks²⁰. Landings appear to remain high but catch-per-unit effort (CPUE) is declining in Malaysia²¹ and the Philippines²². Landings from the Sulawesi Sea, Indonesia are low and only from artisanal fisheries but these could increase with more commercial effort in the fishing ground²³.

11. The fishery stocks are important for the food security and livelihoods of about 45 million Indonesians, Malaysians, and Filipinos living along the coast of the SCS²⁴. This population is roughly at 1:1 ratio of male to female, but in the Philippines, there are 97 females for every 100 men. Fishes from the Sulu Sea are the source of 53 percent of animal protein in the Philippines and 23 percent of animal protein Malaysia²⁵. The fishery sector employs a considerable number of fishermen and provides income to both artisanal and commercial fishermen in all three countries.

¹² Jones, 2002. Primary production in the Sulu Sea. *Proc. Indian Acad. Sci.* 111(3):209-213.

¹³ Field, C. B., M. J. Behrenfeld, J. T. Randerson, and P. Falkowski. 1998. Primary production of the Biosphere: Integrating terrestrial and oceanic components. *Science* 281(5374):200-2006.

¹⁴ Sea Around Us Project, 2007

¹⁵ Cabanban, A.S., 1991, The dynamics of Leiognathidae in tropical demersal ichthyofaunal community., James Cook University of North Queensland, Australia. 262 p. Ph.D. dissertation.

¹⁶ Cabanban, A. S. 2009. Profile of the small pelagic fisheries of Sabah, Malaysia. Report written for Conservation International and the SSME Sub-Committee on Sustainable Fisheries.

¹⁷ FAO, 2005

¹⁸ Jones, 2002 (as above)

¹⁹ see FAO, 2003

²⁰ Sea Around Us Project, 2007

²¹ Cabanban, 2009

²² Resma, 2009. Profile of the Small Pelagic Fisheries of Mindanao, Philippines. Report written for Conservation International and the Sulu-Sulawesi Marine Ecoregion Sub-Committee on Sustainable Fisheries.

²³ Badrudin, 2009. Profile of the Small Pelagic Fisheries of Sulawesi, Indonesia. Report written for Conservation International and the SSME Sub-Committee on Sustainable Fisheries.

²⁴ Badrudin, 2009

²⁵ Dumaup et al., 2004

FAO, 1996

12. The coastal fisheries in the SCS LME are multi-gear²⁶. Gill-nets and hook-and-lines are used primarily in artisanal fishing while trawl and purse-seines are used in commercial fishing. Commercial marine fisheries targets bottom-dwelling fishes, exploited by bottom-trawls, and pelagic fishes, exploited by a variety of seines and gill-nets. Trawling is banned in Indonesia and the Philippines and is limited to present trawling capacity in Malaysia due to declining stocks of bottom-dwelling fishes and invertebrates. Fishing regulations are limited to licensing of fishing gears and vessels, and regulation of mesh sizes, and fish attracting devices (lighting) in purse-seining vessels. Small pelagic fisheries contribute to marine fisheries production of Sabah, Malaysia and Mindanao, Philippines while large pelagic fisheries production (tuna) is mainly from Sulawesi, Indonesia and Mindanao, Philippines.

13. The commercial marine fishery production harvests bottom-dwelling fishes, exploited by bottom-trawls, and pelagic fishes, exploited by a variety of seines and gill-nets. Trawling is banned in Indonesia and the Philippines and is limited to present trawling capacity in Malaysia due to declining stocks of bottom-dwelling fishes and invertebrates. Fishing regulations are limited to licensing of fishing gears and vessels, and regulation of mesh sizes, and fish attracting devices (lighting) in purse-seining vessels.

14. In the SCS region, the Philippines has the biggest fishing footprint. Purse-seine fishing fleets are operating from Davao and Zamboanga, Mindanao for small pelagic fishes. Likewise in East Sabah, Malaysia, the small pelagic fisheries are fully-developed. Gill-nets and lift-nets are used in coastal fishing grounds and purse-seines are used in commercial vessels in offshore fishing grounds. In Kalimantan Province and Sulawesi Province of Indonesia, small pelagic fisheries are not developed at present and exploitation is only in nearshore waters. Gill-nets, baby-trawls, and other gears exploit mostly juvenile stages²⁷. The Government of Indonesia, however, plans to open the fishing ground in the Sulawesi Sea to fishing vessels from the fishing grounds in the Indonesian Seas due to the decline of the small pelagic stocks.

Pollution and Ecosystem Health

Coastal waters

15. Pollution from land is threatening the health of the Sulu-Celebes Sea²⁸. Pollution from sediments is one of the highest on earth (e.g., 1 billion tons in the Philippines²⁹; rivers from Borneo and Sulawesi Islands, with 4 other islands, discharge 4.2×10^9 m t sediment or 20 to 25 percent of global sediment export³⁰). The other major sources of pollution are the run-off of pesticides and fertilizers from large-scale agricultural plantations on northern Borneo which are carried by rivers to the sea and domestic wastes from urban centers.

16. The impacts of land-based sources of pollution are not at the scale of the LME³¹ however their impacts on the quality of coastal waters are notable and chronic, with urbanization and rapid industrialization. These pollutants can potentially become transboundary with the

²⁶ See Badrudin 2009, Cabanban 2009, and Resma 2009

²⁷ Badrudin, 2009.

²⁸ Fortes, M. 2006. Seas of East Asia. p. 177-192 in: UNEP/GPA. 2006. The State of the Marine Environment: Regional Assessments. UNEP/GPA. The Hague.

²⁹ Burke, L. 2003. Highlighting coral reefs in coastal planning and management in Sabah, Malaysia. Washington, D.C: World Resources Institute. (<http://www.wri.org>)

³⁰ Milliman, J., K. L. Farnsworth, and C. Albertin. 1999. Flux and fate of fluvial sediments leaving large islands in the East Indies. *J. Sea Research* 41(1-2): 97-107.

³¹ Heilemann, S. VII-16: Sulu-Celebes Sea LME # 37 (<http://www.lme.noaa.gov>); SSME ECP

circulation of marine waters with the monsoons. Pollution of coastal waters, where the productivity is higher than in the centers of the marine basins, is another threat to the fisheries production in the LME. High sedimentation degrades the quality and condition of seagrass beds, coral reefs, and coastal waters. Chemical pollution from agricultural run-off has impacts on the biology of marine fishes but the extent the marine fish populations in the SCS are affected are unknown. Preliminary investigation of riverine fishes in the Kinabatangan River show that pollutants have been absorbed in parts of the fish samples³².

17. There is also a risk of marine pollution from shipping activities. Ships travel from South China through the Balabac Strait between Palawan Island and North Borneo to ports in the Sulu and Sulawesi Seas. Oil tankers travel from the Makassar Strait to the Celebes Sea to Japan, the Pacific Ocean, the Indian Ocean, and Europe³³.

Coastal and marine ecosystems

18. The only regional assessment of coastal and marine ecosystems in the Sulu-Celebes Sea LME was conducted during the ecoregional planning for the Sulu-Sulawesi Marine Ecoregion in 1999-2000³⁴. The information gathered in the biophysical assessment and the parallel socio-economic assessment was provided to the GIWA/UNEP assessment. No recent regional assessment of the status of these coastal and marine ecosystems is available however isolated studies on these ecosystems provide some insights. Mangrove forests in Kalimantan, Indonesia are reported under threat for conversion to aquaculture and logging³⁵. Mangrove trees in Sabah, Malaysia are threatened still by bark-clearing, coastal development, and illegal oil-palm plantations³⁶. These threats are countered by mangrove forest protection under the Forestry Department. Mangrove forest cover in the Philippines in 2007 has increased up to 60% of the cover in 1900 (500,000 ha) due to conservation efforts of the government and non-governmental in 2007. Mindanao has 23 % of the mangrove forest cover in the Philippines. The state of the estuaries is poor due to agricultural pollution and domestic pollution in the SCS and will remain in poor state until a plan of action to deal with land-based sources of pollution to the marine environment is drafted and enforced. Seagrass beds and coral reefs threatened by sedimentation from forest-clearing and coastal development and are completely buried by coastal reclamation. Eighty percent of coral reefs in Southeast Asia were at risk in 2000 from overfishing, destructive fishing practices, coastal development, and forest clearing³⁷. The prognosis for both seagrass beds and coral reefs is getting better with the increased awareness of policy-makers and efforts of scientists and NGOs and volunteers in the LME³⁸. Seagrass Watch and Reef Check groups have been formed in Kalimantan, Sabah, and Mindanao to survey, assess, and monitor these ecosystems. A bi-annual synthesis of coral reefs includes reports from coral reefs in the LME³⁹.

³² Universiti Malaysia Sabah and WWF-Malaysia Sabah study, unpublished

³³ MPP-EAS. 1998. Marine Pollution Management in the Malacca/Singapore Straits: Lessons Learned. MPP/EAS/Info99/195. GEF/UNDP/IMO Regional Programme for the Prevention and Management of Marine Pollution in the EastAsian Seas. Quezon City, Philippines.

³⁴ SSME, ECP

³⁵ Soegiarto, A. 2004. Research into, and conservation of, mangrove ecosystems in Indonesia. In : Vannucci, M. Mangrove management and conservation: present and future. Published by United Nations University Press, 2004. ISBN 9280810847, 9789280810844. 324 pages

³⁶ Cabanban, 2009

³⁷ Burke, L., L. Selig, and M. Spalding. 2002. Reefs at Risk in Southeast Asia. World Resources Institute.

³⁸ Cabanban, et al

³⁹ Tun, K., L. M. Chou, T. Yeemin, N. Phongsuwan, A. Y. Amri, N. Ho, K. Sour, N. Van Long, C. Nanola, D. Lane, and J. Tuti. 2008. 9: Status of Coral Reefs in Southeast Asia. 131-144. Global Coral Reef Monitoring Network.

19. The health of coastal and marine ecosystems in the SCS is further threatened by the impacts of Global Change. More frequent and severe storms cause the damage due to strong waves and death of seagrass beds and coral reefs due to excessive freshwater that lower the salinity of coastal waters. These can be mitigated by keeping riparian and coastal forests intact. Change in monsoons affect reproduction with changing environmental cues and affecting seasonality in fishing and livelihood⁴⁰. Integrated approaches to managing use of natural resources, from watersheds to open waters, is needed to conserve the coastal and marine habitats that support marine fisheries^{41,42}.

Socioeconomics

Regional Overview

20. Although the overall economies of Indonesia, Malaysia and the Philippines are dominated by the manufacturing and services sectors, the economies of the SCS areas of these three countries also have strong agricultural, forestry and fisheries subsectors. Forestry is a significant economic sector in the Indonesian and Malaysia side of the SCS but much less so in the Philippine side. The fisheries sector in the SCS remains important to the countries, primarily in terms of nutrition where as high as 60 to 70 percent comes from fish. A major problem of fisheries in the SCS is that a large portion of its catch is illegal and unreported. Declining catch has been experienced also in the SCS also although this has been tempered in a way by the rise of aquaculture in the last few decades. Aquaculture production supplies domestic markets as well as international markets generating foreign exchange for the three countries.

21. Outside of agriculture, forestry and fisheries, an area of economic expansion in the SCS is tourism. With its various marine and other natural assets, the SCS is a significant potential magnet for tourism. In the Philippines, alone, tourism has grown at the rate of 5 percent annually in recent years and is one of the brighter sides of the national economy. The global financial crisis, however, is likely to impact on tourism. Other major economic activities in the SCS are mining and oil exploration although there have been concerns about the negative environmental impacts. The services sector is another potential bright spot in the economies of the three countries in the SCS but these are concentrated in major urban centers within and outside the SCS.

22. The populations of the three countries have been increasing at rates from 2 to 4 percent annually⁴³.

Indonesia

23. Indonesia is one of the top fish producing countries in the world. In 2004, it posted about 6.1 million metric tons of fish output valued at \$5.5 billion⁴⁴. This production was the fourth

⁴⁰ Teh, L.S.L., Zeller, D., Cabanban, A.S., Teh, L.C.L., Sumaila, U.R., 2007. Seasonality and Historic Trends in the Reef Fisheries of Pulau Banggi, Sabah, Malaysia. *Coral Reefs* 26 (2) 251-263.

⁴¹ Mumby, P. J., A. J. Edwards, J. Ernesto Arias-Gonzalez, K. C. Lindeman, P. G. Blackwell, A. Gall, M. I. Gorczynska, A. R. Harborne, C. L. Pescod, H. Renken, C. C. C. Wabnitz, and G. Llewellyn. 2003. Mangroves enhance the coral reef fish communities in the Caribbean. *Letter to Nature*. P. 533.

⁴² Manson, F.J., N.R. Loneragan, G.A. Skilleter, and S.R. Phinn. 2005. An evaluation of the evidence for linkages between mangroves and fisheries: a synthesis of the literature and identification for research directions. *Oceanography and Marine Biology: Annual Review* 43:483-513.

⁴³ Dumaup et al., 2003

⁴⁴ Food And Agriculture Organization of the United Nations. No Date-a. *Fishery and Aquaculture Country Profile : Indonesia*. Retrieved March 4, 2009 from http://www.fao.org/fishery/countrysector/FI-CP_ID/en

largest in the world next only to China, Peru and India. By subsector and in terms of value, 57 percent of output was contributed by capture fisheries, 38 percent by aquaculture and 5 percent by inland fisheries. The fisheries sector contributed about 2.4 percent to GDP in 2004. In the same year, fishery exports were approximately \$1.7 billion while fishery imports were \$140 million resulting to a large and positive fish trade balance of about \$1.5 billion. Total primary employment in the Indonesian fisheries sector was 5.73 million persons with 47 percent in capture fisheries, 43 percent in aquaculture and 10 percent in inland fisheries. In addition to this primary employment, there were about 1.5 million persons in secondary employment in the fisheries sector with approximately 80 percent in capture fisheries and 20 percent in inland fisheries.

24. The capture fishery resources in Indonesia can be categorized into large pelagic fishes, small pelagic fishes, demersal and coral fishes, shrimps and other marine species⁴⁵. The small pelagic fisheries mainly consist of scads, trevallies, sardines, anchovies, and mackerels. Since 2000 until 2008, the highest small pelagics production in Indonesian side of the SCS of about 30,534 tonnes was recorded in 2003 while the lowest production of 17,166 tonnes was recorded in 2000. CPUE decreased from 2000 to 2005 and following the trend in production, it was also approximately stable from 2006 to 2008. In 2008, the estimated value of total catch from small pelagics was about \$53 million at the estimated price of \$2 per kilo. Most of the small pelagic fishes caught are usually consumed locally by the population while a small amount is transported into other areas mainly by fish traders. The estimated annual per capita consumption of fish in Indonesia is 21.3 kilograms per year which is the lowest among the three countries. Much of this consumption is met by the catch of local fishermen nationwide.

Malaysia

25. Although not among the largest in the world, the fisheries sector of Malaysia has been an important source of food, employment and foreign exchange for the country. In 2004, national fish production was about 1.5 million metric tons valued at approximately \$1.49 billion⁴⁶. Of this production, 87 percent was contributed by marine capture fisheries while 13 percent came from aquaculture. In the same year, the fisheries sector contributed 1.73 percent of GDP. Unlike Indonesia, Malaysia has been a net importer of fish in recent years. The estimated annual per capita consumption of fish in Malaysia is 59.8 kg which is highest among SCS countries. This level of fish consumption has been met to a significant extent by the small pelagic catch of fishermen from Sabah, on the Malaysian side of the SCS. In 2008, fishery exports totalled only about \$528 million while fishery imports amounted to approximately \$584 million resulting in a negative balance. The fisheries sector of the country directly employed 111,000 people in 2004. The backward and forward linkage industries of fisheries employ an additional number of workers. Of the direct employment, about 81 percent were in marine capture fisheries while approximately 19 percent were in aquaculture. These artisanal fishermen are generally living in relatively poor economic conditions like those in the two other SCS countries. Thus, to alleviate, the national government has been providing fishermen economic incentives. In the last ten years, in particular, the government had reduced fuel costs by 50 percent while in recent years, fishermen were given RM0.10 for every kilo of fish catch that they land.

⁴⁵ Badrudin. 2009. A preliminary profile of the small pelagic fisheries of the Indonesian part of the Sulu-Celebes Seas. Draft.

⁴⁶ Food And Agriculture Organization of the United Nations. No Date-b. *Fishery and Aquaculture Country Profile : Malaysia*. Retrieved March 4, 2009 from http://www.fao.org/fishery/countrysector/FI-CP_MY/en.

26. The State of Sabah, Malaysia, bordering the Sulu-Celebes Sea LME, however, is a net exporter of fishery products in the 1990s to the present^{47,48} exporting RM 445 million in 2002 and importing only RM 56 million. The exported fishery products include anchovies and herrings, jacks, scads and trevallies, mackerels and small to medium-sized tunas, and juveniles of large tunas⁴⁹. In 1997, in terms of value, the main importing countries of fish from Sabah were Japan, Hong Kong, Italy, and the Philippines⁵⁰. Despite the export volumes, the estimated annual per capita supply of fish was in Sabah, in the SSME side of Malaysia was 56 kilograms, which is highest among the SCS countries. CPUE of pelagic fisheries in the area was reported to have declined from 1986 to 2005⁵¹. The declining landings and CPUE in pelagic fisheries in the east coast of Sabah suggests that the stocks in the area may have been over-fished. In 1999, the area of Sabah bordering the SCS had a total number of 15,120 fishermen which formed 73 percent of the total fishermen of Sabah and 19 percent of the national total⁵². A large portion of these fishermen were undocumented migrants from Indonesia and the Philippines.

Philippines

27. In 2008 the Philippines was the 8th largest fish producing nation in the world posting a total output of 4.4 million metric tons⁵³. This production, which was valued at about \$3.6 billion, constituted around 3.2 percent of the total world production of approximately 136 million metric tons. Of the national fish production, 36.2 percent came from commercial fisheries while 34.1 percent and 29.7 percent were contributed by aquaculture and municipal fisheries, respectively⁵⁴. In the same year, fisheries contribution to the GDP was 2.2 percent at current prices and 4.3 percent at constant prices. Fishery exports totaled \$505 million while fishery imports amounted to \$119 million resulting to a positive balance of trade in fisheries of \$386 million. In 2002, the fisheries sector of the country employed approximately 1.6 million fishing operators with the municipal fisheries sub-sector accounting for almost 85 percent of the total while aquaculture and commercial fisheries added 14 percent and 1 percent, respectively.

28. The SCS areas of Philippine waters have been some of the most important fishing grounds for small pelagics in the country. From 2002 to 2006, on average, small pelagics accounted for about 50 percent of the total marine fish landings and 26 percent of all fish landings in the Philippines⁵⁵. In 2006, the recorded landings of small pelagic species in these areas including anchovy, big-eye scad, roundscad, mackerel, frigate tuna and Indian and fimbriated sardines totaled about 1.04 million metric tons. Small pelagics is a staple food of Filipinos, especially the lower income groups. The estimated annual per capita consumption of fish in the Philippines was 38 kilograms per year a significant portion of which are small pelagic species. Social problems, however, are dominant in the sector. Poverty incidence in the fisheries

⁴⁷ Stuel Galid, R. 2003. Investment opportunities in aquaculture industry in Sabah, Malaysia. (<http://www.dof.sabah.gov.my>)

⁴⁸ Cabanban, 2009

⁴⁹ Cabanban, 2009

⁵⁰ Dacho, et al. 1999. Marketing and export of marine-based products. Paper Presented at the Seminar on Enhancing Indigenous Capabilities in the Marine-Based Food Industry by Institute Development Studies, Marco Polo Hotel, Tawau, 29-30 June, 1999.

⁵¹ Cabanban, 2009

⁵² Biusing, R. 1999. Assessment of coastal fisheries in the Malaysian-Sabah portion of the Sulu Sulawesi Marine Ecoregion (SSME). Report Submitted to WWF Malaysia.

⁵³ Food And Agriculture Organization of the United Nations. No Date-c. *Fishery and Aquaculture Country Profile : Philippines*. Retrieved March 4, 2009 from http://www.fao.org/fishery/countrysector/FI-CP_PH/en

⁵⁴ Bureau of Fisheries and Aquatic Resources. 2007. Philippine fisheries profile 2006.

⁵⁵ Resma 2009.

sectors has reached about 62 percent, compared to all households at only 34 percent⁵⁶. As a result, women and children are playing more important roles in artisanal fisheries, adding another dimension to the numerous socioeconomic issues facing the fisheries sector of the Philippines⁵⁷.

Review of Threats and Root Causes

29. The Global International Waters Assessment (GIWA) process⁵⁸, including experts from Indonesia, Malaysia, and the Philippines, identified five major environmental priorities based on their impacts in 2002 and projections for 2020. These are described below in order of priority, along with socio-economic impacts⁵⁹.

Unsustainable Exploitation of Fisheries

30. The environmental impacts of unsustainable exploitation of fisheries include: (i) decline of many demersal and pelagic fish and invertebrate populations (leading, for example, to reduced number of breeders, disruption of predator-prey interactions), ; (ii) the presence of by-catch of endangered or threatened species (e.g., turtles, sharks) by distant-water fishing operations; (iii) destruction of coral reefs by blast-fishing and soft-bottom communities by trawling; decreased viability of stocks in coastal waters and in aquaculture due to contamination and disease; and (iv) decreased genetic variability and extinctions of freshwater fishes due to introductions of *Tilapia* and African catfish. The viability of the fishery resources is generally unknown, partly because the exploitation rates of coastal, artisanal fisheries are not well-documented and accounted in monitoring of fisheries. Illegal, Unreported, and Unregulated (IUU) fishing practices and high international demand for seafood products compound the impact of Malthusian⁶⁰ overfishing.

31. The socioeconomic impacts of unsustainable exploitation of fisheries are many and varied and these are enumerated below:

- Reduced subsistence food supply, throughout Indonesia and the Philippines;
- Reduced economic returns to small-scale fishermen, throughout Indonesia and the Philippines;
- Loss of employment/livelihood among local village fishermen, throughout Indonesia and the Philippines;
- Conflict between user-groups for shared resources (e.g., in the artisanal fishermen versus foreign fishermen, engaged in the Live Reef Fish Food Trade);
- Loss of food sources of protein for human and animal consumption, throughout many parts of the Philippines;
- Loss of protected species (e.g., dugongs)

⁵⁶ Israel, D. C. 2004. Economics and environment in the fisheries sector. p. 131-137. *In* Turbulent Waters: the Status of Philippine Marine Fisheries. Coastal Resources Management Project of the Department of Environment and Natural Resources, Cebu City, Philippines. 378 p.

⁵⁷ Siason, I. M. 2004. Women in fisheries in the Philippines. p. 144-149. *In* Turbulent Waters: the Status of Philippine Marine Fisheries. Coastal Resources Management Project of the Department of Environment and Natural Resources, Cebu City, Philippines. 378 p.

⁵⁸ The results of the UNEP-led GIWA process are presented here because it was developed to provide the basis for GEF interventions in Large Marine Ecosystems of the world.

⁵⁹ UNEP (2005). (SCS_LME)

⁶⁰ Overfishing due to human population growth ((Pauly, D. 1990. On Malthusian Overfishing. NAGA, the ICLARM Quarterly 13(1):3-4.)

- Increased risk of disease in commercially valuable stocks, including introduced diseases with increased aquaculture;
- Inter-generational equity issues (access to resources) among poor local fisher families; and
- Potential human health impacts (from loss of protein sources).

Habitat Destruction and Community Modification

32. The environmental impacts of human activities in the SCS LME were assessed by GIWA/UNEP as severe. Loss of ecosystems or ecotones from land to sea has been significant. For instance, 30 % of forests was lost from 1870s to 1970s; 80 percent loss of forest land cover in the Philippines; 40-60 percent loss in (Sabah) Malaysia, while much still remained in Kalimantan, Indonesia. In the Philippines, 60-80 percent of mangrove forests have been lost 70 percent of coral reefs are damaged, and there have been serious damage to soft-bottom communities in bays by trawling. Habitat modification was also assessed as severe from introduction of species and fishing activities (particularly of coral reef fishes for the Live Reef Fish Food Trade). The number of species threatened with extinction was high⁶¹ (Indonesia – 60 of 1,400 species of freshwater fishes; Malaysia – 14 of 449 species; Philippines - 26 of 230 species).

33. The socio-economic impacts of marine habitat and community modification are moderate on health to severe for certain economic, social, and community indicators. There are serious economic and health impacts from degraded marine ecosystems on subsistence fishing communities, which are generally characterized with highest birth rates, and with low protein intake. Coral reefs provide annual income of 1.6 billion USD from fisheries and 1.5 billion USD from tourism and other ecosystem services in 2002. It is projected that in 2020 that loss of income will be 2.5 billion (Philippines) and 2.6 billion USD (Indonesia) if mitigation measures for overfishing, habitat destruction, and sedimentation are not implemented.

Pollution

34. The GIWA/UNEP study found that pollution from various sources had moderate environmental impacts in 2002 to severe impacts projected to 2020 in all aspects. Pollution from major centers of populations was the focus of the assessment. The sources of pollution evaluated were sewage, agriculture, aquaculture, and forest clearing. The environmental impacts of water pollution are many but most of them have only slight to moderate impacts in the SCS LME. The assessed ecological impacts are measured in terms of:

- microbial pollution – slight impact throughout the region but significant near urban centers affecting aquaculture and fisheries production;
- eutrophication of coastal waters – moderate impact throughout the region, but significant in most bays and near urban centers;
- chemical pollution – slight impact throughout the region but locally significant in urban centers and major agricultural areas;

⁶¹ The number of threatened marine species was not reported during the GIWA assessment because of the absence of scientific assessments for these diverse groups of fishes and invertebrates. The IUCN Survival of the Species Group is the global authority on species assessments. The Global Marine Species Assessment program of IUCN, launched in late 2005, is addressing this need. Thus far, the global assessments of wrasses (Labridae), groupers (Serranidae) are completed. *Cheilinus undulatus* (Labridae) and four species of groupers (Serranidae; *Cromileptis altivelis*, *Mycteroperca rosacea*, *Plectropomus areolatus*, and *P. laevis*, found in the SCS region, are threatened (to extinction; http://www.hku.hk/ecology/GroupersWrasses/iucnsg/Docs/Final_Report_Workshop_2007.pdf). Regional assessments are needed for species conservation and fisheries management.

- suspended solids – severe impact throughout the region, from deforestation within the region and transboundary impacts from the South China Sea; highly threatened sites are northern Mindanao, northern Borneo (Sabah), Malaysia, and northern Sulawesi, and much of Luzon; and
- spills – slight impact throughout the region, despite busy oil tanker traffic in the southeastern part of the Celebes Sea.

35. GIWA/UNEP identified three moderate socio-economic impacts of pollution in 2002. Most impacts were notable in Mindanao, Sabah, Kalimantan, and other urban centres in the Visayas. The socio-economic impacts include the following:

- increased risk to human health;
- increased costs of human health protection;
- increased costs of water treatment;
- costs of clean-up;
- declines in fisheries production; and
- declines in fisheries values.

Freshwater Shortage

36. Freshwater shortage has moderate environmental and economic impacts in 2002 and would continue to have moderate impacts in 2020. The impacts of Freshwater Shortage to health and other community aspects however were assessed as slight in 2002 but projected as moderate in 2020. The environmental impacts of the human activities in the watershed and drainage basins are modification of stream flow, pollution of existing supplies, and changes in the water table. Modification of stream flow was severe in Mindanao and Visayan Islands, Sabah, East Kalimantan, and many islands in the region. The socio-economic impacts in the region include:

- loss/interruptions of potable water supply;
- increased costs of irrigation;
- reduction in future use options;
- human health impacts, resulting from loss/interruptions of water supply;
- future costs in infrastructure for water supply;
- potential damage to infrastructure; and
- increased conflicts between user-groups.

Global (Climate) Change

37. The impacts of the El Nino Southern Oscillation (ENSO) were assessed as slight in all aspects in 2002 but projected to become moderate in terms of economic and social impacts by 2020. The ecological impacts of Global Change in climate are related to alterations in the hydrodynamic patterns, ocean circulation, sea level, and sea surface temperatures. There was increased variability in current regimes (monsoonal) and climate in relation to ENSO events. Sea level rise and elevated Sea Surface Temperatures were slight and isolated in the region. The socio-economic impacts of Global Change were slight in 2002 but health and economic effects were already observed. The key socio-economic impacts of Global Change were identified as follow:

- Changes in productivity in agriculture, forestry, and fisheries;
- Changes in resource distribution and political jurisdiction;
- Freshwater availability (potable);
- Increased human health care (due to lack of freshwater);
- Response costs to extreme events;
- Loss of income from employment (from all the above indicators);

- Loss of income from fisheries; and
- Loss of opportunity for domestic and foreign investments.

Causal Chain Analysis and Policy Options

38. The Causal Chain Analysis, under the GIWA process, was focused only on one of the 5 environmental concerns – *Habitat Destruction and Community Modification*. Immediate and intermediate causes were identified and the root causes of all these include: population growth coupled with poverty; increasing demand; and economic growth. Population growth drives migration and urbanization, lack of employment, and poverty. These in turn impose increased pressure on the environmental services, e.g., fisheries, shelter, and water source, and contribute to declining fisheries stocks, increased habitat destruction, increased pollution, illegal practices, and corruption. Increased market trends, especially for lucrative fishery products, drive the burgeoning and unsustainable use of resources and also influence corruption and illegal practices.

39. Policy options recommended were based on the root causes of *Habitat Destruction and Community Modification* in the Sulu-Celebes Sea in 2002. These include:

- a) Coordination and integration of tri-national actions to maximize effectiveness in meeting international commitments, of national departments and agencies to be cost-effective in implementing interventions, and of different levels in the governments and communities to enhance effectiveness of interventions.
- b) Intervention through the expansion of: (i) programs to address population growth and poverty, including focus on developing alternative/additional income generation programs; (ii) programs on integrated catchment and coastal-zone planning and management; (iii) local conservation programs, particularly focused on co-management of and development of more protected areas for biodiversity conservation and fisheries; and (iv) training and education programs to build additional long-term capacity and awareness among stakeholders

40. The biological and socio-economic assessment conducted in 1999 to 2000 under the SSME ecoregional conservation planning activity, facilitated by WWF for the Sulu-Sulawesi Marine Ecoregion, identified the same threats and root-causes. The threats to marine fisheries in the SCS are over-exploitation, habitat destruction and modification, and IUU⁶². The Sulu-Sulawesi Marine Ecoregion Conservation Plan (ECP) was prepared in 2001 to address common and transboundary threats, and discussed further below, includes three programs of work and recommendations for policy changes and was ratified by Indonesia, Malaysia, and the Philippines in 2006. However, no Strategic Action Program (SAP) was prepared for the Sulu-Celebes Sea LME, following the Causal Chain Analysis of the environmental issues and building on the recommended Policy Options, under the GIWA process. This Project is envisaged to fill in this gap and to build on the progress in implementing the SSME Ecoregion Conservation Plan since 2004.

Preliminary TDA on marine fisheries in the SCS

41. The environmental concerns in the Sulu-Celebes Sea LME identified early in the decade remain the same at present⁶³. Unsustainable exploitation of marine fisheries still occur in

⁶² See: Badrudin, 2009; Cabanban, 2009; and Resma, 2009

⁶³ Based on the common threats identified in the reports, national consultations, and site-visits by the National Consultants for Indonesia, Malaysia, and the Philippines; See: Badrudin, 2009; Cabanban, 2009; and Resma, 2009

Indonesia, Malaysia, and the Philippines. The intermediate causes are the high fishing effort in artisanal and commercial operations and IUU. These in turn are due to poor enforcement of fishing regulations, lack of fisheries management plan, and lack of capacity for fisheries management. The root-causes are high international demand for marine fishery products human consumption (e.g., coral reef fishes, demersal soft-bottom fishes, small pelagic fishes, large pelagic fishes) and for fish-meal (small pelagic fishes). Small pelagic fish stocks are affected by increased international demand for frozen or processed (canned, dried) food, as fish-meal (in aquaculture farms), for pet food (herrings, sardines) and indirectly by the increase demand for live coral reef fishes. Small pelagic fishes are fed to groupers in the live reef fish grow-out cages in Sabah, Malaysia and in Siboto, Bongao, Philippines, which are then exported for the live reef fish trade. The lack of employment, poverty, and illegal migration in coastal villages, especially in Tawi-Tawi, Philippines and Indonesia drive the high exploitation in the artisanal fishery, which are mainly stocks of small pelagic fishes and coral reef fishes.

42. Habitat destruction and community modification compound the impacts of intensive fishing effort on fishery stocks. Mangrove forests have been cleared for coastal development, destroying the nursery sites of these fishes. Estuaries have been polluted by urban and industrial wastes and agricultural run-off, which can have detrimental effects on the biology of these fishes. Sediments can clog gill filaments, especially in the larval stages, and can cause mortality. Pollutants from agricultural plantations can affect the reproductive organs and behaviour of fishes and may not be able to produce viable larvae. All these factors can contribute to the decline of fisheries stocks.

Institutional, Sectoral and Policy Context

National Policy and Institutional Frameworks

43. In the light of the national fishery law of Indonesia, the Fishery Law No. 45 of 2009 Regarding the Amendment of the Fishery Law No. 31 of 2004 about fishery provides the legal basis for the utilization of fisheries resources to enhance just and sustainable grade of life through management of fishery, monitoring and law enforcement system optimally.

44. The Fisheries Act of 1985 provides the legal framework for the management of fisheries resources in Malaysia⁶⁴. Among others, this law stipulates the preparation of a management plan for each fishery consistent with sound management and conservation. It further requires conformity of national fishery development to conservation and management policies. Fishery management in Malaysia is organized by zones. Zone A is less than five nautical miles from the shore and reserved for non-commercial, owner-operated small-scale vessels using traditional gear. Zone B is beyond 5 nautical miles and reserved for owner-operated vessels less than 40 horsepower using trawls and purse seines. Zone C1 is beyond 12 nautical miles and reserved for commercial fishing using vessels more than 40 gross tons and using trawls and purse seines. Zone C2 is beyond 30 nautical miles and reserved for deep sea vessels greater than 70 gross tons. Organizationally, the federal Department of Fisheries (DOF) of Malaysia is responsible for the overall management and administration of fisheries and relevant matters. DOF maintains an office in the state of Sabah which is responsible for fisheries management of the Malaysia side of the SCS. Fisheries management in Indonesia, therefore, is a centrally organized structure with the national government mainly in-charge.

⁶⁴ Flewelling, P. and G. Hosch. 2004b. Country Review : Malaysia. Review of the State of World Marine Capture Fisheries Management : Pacific Ocean. *FAO Fisheries Technical Paper No. 488/1*. Retrieved March 11, 2009 from <http://www.fao.org/docrep/009/a0477e/a0477e0c.htm>

45. In the Philippines, the Fisheries Code of 1998 (RA 8550) provides the basis for the development, management and conservation the fisheries and aquatic resources⁶⁵. Another law, the Agriculture and Fisheries Modernization Act of 1997 (RA 8435) provides for the modernization of the agriculture and the fisheries sectors. One more law, the Local Government Code of 1991 (RA 7160) provides for the devolution from the national to the local governments of the management of local resources, including fisheries and marine resources. By subsector, capture fisheries management is divided between municipal fisheries which is within the 15 kilometer limit of coastal waters and managed by the local governments and commercial fisheries which is beyond 15 kilometers and managed by the national government. The Bureau of Fisheries and Aquatic Resources (BFAR) under the Department of Agriculture (DA) is the primary agency tasked with the management of the fisheries sector at the national level but various other national agencies are involved in fisheries development. At the local level, local government units (LGUs) manage fishery and marine resources. In the municipalities, the Municipal Agriculture Office (MAO) and the Municipal Fisheries and Aquatic Resources Management Councils (MFARMC) are in-charge of the management and development of local fisheries resources. At both the national and local levels, fisheries and marine resource conservation together, with productivity and social equity, are emphasized as the main goals of fisheries development.

46. Aside from the main fishery laws, other laws and regulations in related economic sectors impact on the fisheries management in the three SCS countries (Tables 1a, 1b, 1c). These laws and regulations do not deal directly on fisheries but are important to the sector because their coverage includes marine areas and environments. Furthermore, aside from the main fisheries institutions, other government institutions are part of fisheries management and development in the three SCS countries. In Indonesia, the major institutions include the Indonesian Center for Research in Marine Capture Fisheries and other research institutes that provide research backing to the MMAF, the navy and maritime police which are involved in enforcement, and the universities and colleges that provide the scientific network for fisheries. The main institutions that are related to fisheries in Malaysia are the Department of Fisheries (DOF) of the Ministry of Agriculture, Ministry of Science, Technology and the Environment (MOSTE) that provides scientific support for fisheries management, the Fisheries Development Authority (FDAM) which is involved in fisheries processing and marketing, and the law enforcement agencies such as the Fisheries Marine Service, Navy, Coast Guard and Marine Police. In the Philippines, the major fisheries-related institutions are the Department of Environment and Natural Resources (DENR), National Fisheries Research and Development Institute (NFRDI), Philippine Council for Aquatic and Marine Research and Development (PCAMRD) and other government institutions such as the maritime police and coast guard which are involved in enforcement.

47. The specific tools applied in the three countries to manage fisheries are similar and mainly regulatory. In Indonesia, fishing is usually managed through licensing and limited access, area designations, total allowable catch (TAC), gear restrictions and similar instruments. In Malaysia, the common tools are access limitations, gear restrictions, spatial restrictions and temporal restrictions. The usual instruments in the Philippines are also gear restrictions, limited access, spatial restrictions and temporal restrictions although the not so common tool of

⁶⁵ Flewelling, P. and G. Hosch. 2004c. Country Review : Philippines. Review of the State of World Marine Capture Fisheries Management : Pacific Ocean. *FAO Fisheries Technical Paper No. 488/I*. Retrieved March 11, 2009 from www.apfic.org/modules/xfsection/download.php?fileid=164

Environmental Compliance Certificate (ECC) is also used in the commercial fisheries sub-sector. While these tools have been applied, monitoring and enforcement has been considered as generally deficient in these countries.

48. There are some similarities and differences in the cost of fisheries management in the three countries. In Indonesia, Malaysia and the Philippines, most of the management cost of the fisheries sector is borne by the government. With increasing stakeholder participation, need for more planning and other related factors, this management cost is increasing over time. Given their varying government resources, Indonesia and the Philippines are hard pressed while Malaysia is in a better position to meet these management costs. All three countries are searching for alternative ways to finance fisheries management through increased license fees, selling use rights, higher penalties and other income generating measures. One of the problems of these approaches is that in general public revenues such as those emanating from fisheries cannot be earmarked specifically for fisheries management but goes directly into the national government for general use.

TABLE 1a. STATUS OF SCS-RELATED LEGISLATION FOR INDONESIA

SECTOR	
Constitution	1945 Constitution
Environment	Law No. 32/2009 on Environmental Protection and Management
Coastal Zone	Law No. 5 – 1983 on Indonesia EEZ; Law No. 27/2007 on Integrated Coastal and Small Island Management
Marine Fisheries	Law No. 31-2004 on Fisheries and Its Amendment Law 45/2009
Marine Aquaculture	Law No. 31/2004 on Fisheries and Its Amendment Law No. 45/2009
Marine Pollution	Law No. 32/ 2009 on Environmental Protection and Management Govt. Regulation No. 19/1999 on Mitigation and/or Marine Destruction Gov't Reg. 27/1999 on Environmental Impact Analysis
Mining, Minerals and Petroleum	Law No. 22 – 2001 on Oil and Gas Law No. 4/2009 on Mining, Minerals and Coal Law No. 32/2004 on Local Government

TABLE 1b. STATUS OF SCS-RELATED LEGISLATION FOR MALAYSIA

SECTOR	
Constitution	Constitution of the Federation of States of Malaysia
Environment	National Biodiversity Strategy Environmental Quality Act, 1974 amended by the Environmental Quality (Amendment) Act 1985 (Act No. A636), the Environmental Quality (Amendment) Act 1996 (Act No. A953) and numerous minor amendments Environmental Quality (Prescribed Activities) (Environmental Impact Assessment) Order 1987, amended EIA Guidelines for Coastal Resort Development Projects (1994), Petrochemical Industries (1994), Industrial Estate Development (1994), Golf Course Development (1994) EIA Procedures in Malaysia (1990, revised)

TABLE 1b. STATUS OF SCS-RELATED LEGISLATION FOR MALAYSIA	
SECTOR	
	Handbook of Environmental Impact Assessment Guidelines (1987)
Coastal Zone	Land Ordinance 1956 (Sabah)
	Local Government Act 1976 (Act No. 171)
	Land Acquisition Act 1960 (Act No. 486), revised 1992
	Land Development Act 1956 (Act No. 474), revised 1991
	National Land Rehabilitation and Consolidation Authority (Incorporation), Act 1966 (Act No. 398), revised 1989
	Land Conservation Act 1960 (Act No. 385), revised 1989
	Town and Country Planning Act 1976 (Act No. 172), amended
	Sewerage Services Act 1993 (Act No. 508)
	Waters Act 1920 (Act No. 418), revised 1970, 1989
	Drainage Works Act 1954 (Act No. 354), revised 1988
	Shoreline Management Plan 2007
	Integrated Coastal Zone Management Policy (draft, submitted to Government in)
Marine Fisheries	Fisheries Act 1965/1963 (Act No. 210), amended by the Fisheries (Amendment) Act 1985 (Act No. 317)
Marine Aquaculture	Fisheries Act, 1963
Marine Pollution	Merchant Shipping (Oil Pollution) Act 1994 (Act No. 515)
	Merchant Shipping Act 1952 (Act No. 70), revised 1966, 1982 and 1992
	Port Authorities Act 1963 (Act No. 488), revised 1992
	Ports (Privatisation) Act 1990 (Act No. 422)
	Exclusive Economic Zone Act 1984
Mining, Minerals and Petroleum	Mineral Development Act 1994 (Act No. 525)
	Petroleum (Safety Measures) Act 1984 (Act No. 302)
	Petroleum Development Act 1974 (Act No. 144)
	Petroleum Mining Act 1966 (Act No. 95), revised 1972
	Land and Mining Plans and Documents (Photographic Copies) Act 1950 (Act No. 233), revised 1980

TABLE 1c. STATUS OF SCS-RELATED LEGISLATION FOR PHILIPPINES	
SECTOR	
Constitution	Constitution of the Republic of the Philippines, 1987
Environment	Philippine Clean Water Act of 2004 (RA 9275)
	The Strategic Environmental Plan for Palawan (RA 7611), 1992
	The Environmental Impact Statement Law Establishing an Environmental Impact Statement System, Including Other Environmental Management Related Measures and for Other Purposes (PD 1586), 1978
	The Philippine Environment Code (PD 1152), 1977
	The National Integrated Protected Areas Systems Act of 1992 (RA 7586)
	The Wildlife Resources Conservation and Protection Act (RA 9147)
	The Pollution Control Law (PD 984), 1976
Coastal Zone	Prescribing Guidelines for the Prospecting of Biological and Genetic Resources (EO 247), 1995
	The Local Government Code of 1991 (rights and responsibilities of LGUs and offices include management and protection of the coastal environment) (RA 7160)
Maritime Zones	Adopting Integrated Coastal Management as a National Strategy (EO 533), 2006
	RA 9522, 2009 (An Act to Amend Certain Provisions of Republic Act No. 3046, as Amended by Republic Act No. 5446, to Define the Archipelagic Baselines of the Philippines, and for Other Purposes)
	Maritime Industry Decree of 1974 (PD 474)
	The Philippine Fisheries Code of 1998 (RA 8550) (delineating municipal waters from national waters for municipal and commercial fishing purposes, respectively)
	The Revised Coast Guard Law (PD 601), 1974
Marine Fisheries	The Philippine Fisheries Code of 1998 (RA 8550)
	The Agriculture and Fisheries Modernization Act of 1997 (RA 8435)
	Devolving to Municipal and City Governments the Registration of Fishing Vessels Three (3) Gross Tonnage Below (EO 305), 2004 (This refers to municipal/city fishing vessels.)
	Creating the Fisheries and Aquatic Resources Management Councils (FARMCs) in Barangays, Cities and Municipalities, Their Composition and Functions (EO 240), 1995
Marine Aquaculture	The Philippine Fisheries Code of 1998 (RA 8550)
	The Agriculture and Fisheries Modernization Act of 1997 (RA 8435)
Marine Pollution	The Marine Pollution Decree (PD 979), 1976
	The Revised Coast Guard Law (PD 601), 1974
	The Department of Interior and Local Government (DILG) Act of 1990-Philippine National Police (PNP) Law (establishing the PNP under a reorganized DILG and providing for creation of the Maritime Command as one of the National Service Support Units (NSSUs) of the PNP (RA 6975)
Mining, Minerals and Petroleum	The Philippine Mining Act of 1995 (RA 7942)

49. The fisheries policy framework in the three countries is complemented by their commitments to a number of international conventions. The three SCS countries have ratified various international conventions and other agreements not only dealing on fisheries but also on

other sectors and concerns that impact directly or indirectly on fisheries (Table 2). In particular, the three countries have ratified the Convention on Biological Diversity (CBD), Convention on International Trade in Endangered Species (CITES), RAMSAR Wetlands Convention, United Nations Framework Convention on Climate Change (UNFCCC), and World Heritage Convention. Furthermore, the countries have sovereign rights to the 12 nautical mile limit and have declared 200-mile EEZ. In addition, the Philippines and Malaysia have ratified the United Nations Convention on the Law of the Sea (UNCLOS) while the Philippines and Indonesia have unilaterally used the “Archipelagic Doctrine” to define their territorial waters.

TABLE 2. STATUS OF COUNTRY COMMITMENTS TO INTERNATIONAL LAW AND INSTRUMENTS APPLICABLE TO THE SCS				
Category	International/Regional Instrument	Indonesia	Malaysia	Philippines
Legal	UN Convention on the Law of the Sea (UNCLOS), 1982	Ratified	Ratified	Ratified
Fisheries	UN Fish Stocks Agreement for the Conservation and Management of Straddling Stocks and Highly Migratory Stocks	Ratified in 2009	Ratified, 14 Oct 1996	Ratified
	FAO Code of Conduct for Responsible Fisheries	Yes	Yes	Ratified
	International Plan of Action to Prevent, Deter and Eliminate illegal, unreported and unregulated fishing	Yes		Ratified
	International Plan of Action for the Conservation and Management of Sharks	Yes	Yes	Ratified
	International Plan of Action for the Management of Fishing Capacity	Yes	Yes	Yes
	International Plan of Action for Incidental Catch of Seabirds	Yes	Yes	Yes
	Commission for the Conservation of Southern Blue-fin Tuna	Member	No	Cooperating Non-member
	International Commission for the Conservation of Atlantic Tuna	No	No	Contracting Party
	Indian Ocean Tuna Commission (IOTC)	Member	Member	Member
	Western and Central Pacific Fisheries Commission (WCPFC)	No	No	Member
	Asia-Pacific Fishery Commission (APFIC)	Member	Member	Member
Biodiversity	Convention on Biological Diversity (CBD)	Ratified	Ratified	Ratified
	Convention on Migratory Species (The Bonn Convention) (1983)	Signed	No	Signed
Large marine ecosystem management	Coral Triangle Initiative (CTI), Asia Pacific Economic Cooperation	Member	Member	Member
	MOU between the Government of the Republic of Indonesia and the Government of Malaysia and the Government of the Republic of the Philippines on the Adoption of the Conservation Plan for the Sulu-Sulawesi Marine Ecoregion (SSME)	Ratified	Ratified	Ratified

	Strategic Action Programme for the South China Sea	Approved	Approved	Approved
	Partnerships in Environmental Management in the Seas of East Asia	Party	Not a party	Party
	Coordinating Body for the Seas of East Asia (CoBSEA), United Nations Environment Programme	Member	Member	Member
Safety & Environment	International Convention for the Safety of Life at Sea	Ratified	Ratified	Ratified
	United Nations Framework Convention on Climate Change (UNFCCC)	Ratified	Ratified	Ratified
	Kyoto Protocol to the UNFCCC	Yes	Ratified	Ratified
	Declaration on the Protection of the Marine Environment from Land-Based Activities, 1995	Yes		Ratified
	Convention on Wetlands of International Importance especially as Waterfowl Habitat (The Ramsar Convention) (1971)	Ratified	Ratified	Ratified
	Convention for the Protection of the Ozone Layer	Ratified	Ratified	Ratified
	Action Agenda for Sustainable Development, Earth Summit (Agenda 21) (1992)	Yes	Yes	Ratified
	World Commission on Environment and Development (1987)	Member	Member	Member
	Convention Concerning the Protection of the World Cultural and Natural Heritage (1972)	Accessed	Ratified	Ratified
Trade and Economy	Convention on the International Trade of Endangered Species of Wild Flora and Fauna (CITES) (1973)	Ratified	Ratified	Ratified
	Brunei Darussalam-Indonesia-Malaysia-the Philippines – East ASEAN Growth Area (BIMP-EAGA)	Member	Member	Member
Pollution	Convention on the Prevention of Marine Pollution by Dumping of Wastes and other Matter, 1972	Ratified	Ratified	Ratified
	International Convention of 1973 for Pollution Prevention caused by Navigation and Protocol of 1978 (MARPOL)	Yes	Ratified	Ratified
	International Convention on Liability and Compensation for Damage in Connection with the Carriage of Hazardous and Noxious Substances by Sea, 1996	No	No	No
	Stockholm Convention on Persistent Organic Pollutants (POPs)	Signed	Signed	Ratified
	Cartagena Protocol on Bio-safety	Ratified	Ratified	Ratified
	Convention on the Control of Transboundary Movements of Hazardous Wastes and their Disposal	Signed	Signed	Ratified
	Protocol on Substances that Deplete the Ozone	Ratified	Ratified	Ratified

	Layer			
	International Convention on Civil Liability for Oil Pollution Damage	Yes	Ratified	Ratified

50. There have been some overlapping of duties and functions between fisheries institutions involved in fisheries management which hinder the efficient discharge of overall government services in the fisheries sector in the SCS countries. Because of this, there have been past efforts, albeit not so successful, to streamline these institutions for a more efficient and cost effective management. In addition to public institutions, non-government organizations (NGOs) at the local, national and international levels play important roles in the management of fisheries and aquatic resources in the SCS countries, particularly in Indonesia and the Philippines and to a much lesser extent in Malaysia. These non-government stakeholders are usually involved in many phases of fisheries management, such as project planning and implementation of projects, and receive funding from local, national and international sources. In addition to NGOs, numerous private entities such as fisheries stakeholder organizations and community groups also exist particularly in Indonesia and the Philippines at both the local and national level that are actively involved in fisheries management.

51. While institutional, sectoral and policy mechanisms are in place in Indonesia, Malaysia, and the Philippines, these countries have been facing common concerns relating to the management of the SCS. In particular, the identified intermediate causes of habitat loss in the SCS are: a) lack of stewardship, inadequate implementation of policy and legislation, and lack of resources and capacity to execute the law including enforcement; b) unresolved access issues among local and foreign fishermen; c) inappropriate use of new and/or inappropriate technology; including materials used in destructive fishing; d) lack of education or awareness, conservation ethics and perceptions; and e) inadequate investment in scientific assessments and management⁶⁶. These problems, therefore, need to be strongly addressed for the improved management of fisheries and other resources in the SCS in the future.

52. At the regional level, the three SCS countries are members of fisheries-related regional organizations which have SCS as part of their geographic coverage. These organizations include the BIMP-EAGA (Brunei, Indonesia, Malaysia, Philippines - East Asia Growth Area), SEAFDEC (Southeast Asian Fisheries Development Center), NACA (Network of Aquaculture Centres in Asia-Pacific), and Food and Agriculture Organisation of the United Nations FAO. The countries are also members of the ASEAN (Association of Southeast Asian Nations). Furthermore, the countries are members of the Tri-National Committee for SSME (Sulu-Sulawesi Marine Eco-region). They are also one of the strongest proponents of the Coral Triangle Initiative (CTI) which includes three other neighboring Pacific island nations. The CTI program has a number of sub-projects where the three countries are also covered. The SCS countries, therefore, have several potential institutional platforms in their region through which they can pursue their common goal of conservation and sustainable management in the SCS.

The SSME Ecoregion Conservation Plan (ECP), Tri-National Committee (Tri-Com) and Sub-Committees (Sub-Com)^{67,68,69}

⁶⁶ DeVantier, L., A. Alcala and C. Wilkinson. 2004. The Sulu-Sulawesi sea: environmental and socioeconomic status, future prognosis and ameliorative actions. P. 88-97. *In* Ambio, Volume 33, Number 1-2, February 2004.

⁶⁷ This section is based primarily from Miclat and Trono (2008) as previously cited.

53. In 2001, the three countries developed a common 50-year biodiversity vision for conservation, sustainable use of resources, and collaborative and participatory transboundary management in the SCS LME. The vision consists of 58 Priority Conservation Areas for conserving the biodiversity in the SCS. From this vision, the SSME ECP was developed through participatory processes. The ECP aims to: (i) establish management strategies and coordinated institutions for effective ecoregional conservation as described in Article III of the MOU on SSME in 2004; (ii) establish a functional integrated network of priority conservation areas to ensure ecological integrity; (iii) develop sustainable livelihood systems that support marine and coastal conservation across the ecoregion; (iv) shape economic development compatible with biodiversity conservation; (v) enhance understanding of biodiversity resources and factors affecting them to form a basis for management decisions; (vi) develop communication, education and outreach programs and strategies to motivate people to take conservation action; (vii) develop sustainable financing mechanisms to support the cost of conservation and resource management; (viii) build and enhance the capacity of stakeholders to effectively manage the conservation of the SSME; (ix) implement coordinated protection of threatened marine species to ensure maintenance of viable populations and protection of critical habitats; and (x) improve coastal, oceanic and other types of fisheries resource conditions and management by developing a framework strategy, institutions and appropriate interventions.

54. The three countries signed an MOU that adopted the ECP in February 2004 that was ratified by all countries in 2006 to take effect until February 2016. A report on the progress of the implementation of the ECP is found in Annex 1. The Memorandum of Understanding (MOU) provided guidance for the formation of a tri-national governance for the implementation of the ECP. The SSME Tri-Com was formally established in March 2006. It consists of 5-6 delegates per country with rotating chairmanship. Three Sub-Committees, representing the three major conservation and management targets as specified in the ECP, have been created. Chairmanship for each Sub-Com is assigned permanently. The Sub-Com on the Threatened, Charismatic and Migratory Species, chaired by Indonesia, provides technical advice and recommendations to improve the policies on the protection and management of threatened, charismatic and migratory species and their habitats in order to maintain the full range of biodiversity and provide for the long-term socioeconomic and cultural needs of human communities. The Sub-Com on Marine Protected Areas and Networks, chaired by the Philippines, oversees work on the conservation and sustainable management of biodiversity through the establishment and effective management of MPAs and Networks.

55. Of particular relevance to this Project is the Sub-Com on Sustainable Fisheries, chaired by Malaysia, that promotes regeneration, rehabilitation and restoration of coastal wetlands, including abandoned shrimp farms, degraded coastal wetlands, forest reserves and other coastal areas. This Sub-Committee, during its Annual Meeting in 2008, approved the development of the *Sulu-Celebes Sea Sustainable Fisheries Management Project* as an activity in the Action Plan for 2008 to 2012 to address issues, such as Illegal, Unreported, and Unregulated (IUU) Fishing, growing Live Reef Fish Trade and declining stocks of targeted coral reef fishes and small pelagic fishes, and in building capacity for fisheries management.

⁶⁸ Dumaup, J. N. B., R. M. Cola, R. B. Trono, J. A. Ingles, E. F. B. Miclat and N. P. Ibuna (Eds.). 2004. Conservation plan for the Sulu-Sulawesi marine ecoregion. Published by the World Wildlife Fund for Nature – Sulu Sulawesi Marine Ecoregion, LBI Building 57 Kalayaan Avenue, Diliman, Quezon City, 1101 Philippines. 168 p.

⁶⁹ Miclat, F.B. and R.B. Trono. 2008. One vision, one plan, common resources, joint management. p. 4-9. *In* Tropical Coasts, Volume 12 Number 1, July 2008 Issue.

56. At the national level, representatives of relevant national government agencies form the national level governance structure for SSME and together with country offices of international NGOs form the technical working groups/presidential commission that take care of the conservation and sustainable management of SCS resources. The Technical Working Group and National Committee for SSME for Indonesia are composed of the MMAF as the lead and head of delegation, Ministry of Environment, Ministry of Forestry, Ministry of Foreign Affairs and WWF. For Malaysia, the members of the Technical Working Group for SSME are the DOF-Sabah, MAFI as the lead and head of delegation, Ministry of Environment, Ministry of Tourism and Culture, Sabah Parks, Sabah Wildlife Department, Fisheries Department-Malaysia, Universiti Malaysia Sabah, Sabah Forestry Department and WWF. For the Philippines, the Presidential Commission for the Integrated Conservation and Development of Sulu-Celebes Seas (PCSCDSCS) consists of the DENR as lead and head of delegation, Department of Agriculture-Bureau of Fisheries and Aquatic Resources, Autonomous Region of Muslim Mindanao (ARMM), Philippine Council for Aquatic and Marine Research and Development (PCAMRD), Presidential Adviser on Mindanao Affairs, WWF, CI and the Department of Foreign Affairs (DFA). Civil society organizations are invited as resource persons and/or observers in Tri-National Meetings but participate actively in the Tri-Com and Sub-Com activities.

57. The process of governance building in the SSME in the early years has been challenging on account of the many divisive issues that normally characterize transboundary, semi-enclosed seas where national boundaries overlap and resources are shared. These considerations have initially slowed down the progress in the formalization of the governance structure of the SSME but have been overcome by the three countries. The Tri-Com now presents opportunities in moving the SSME agenda forward, particularly for the effective implementation of the ECP and can be an important vehicle in enhancing the implementation of regional and international instruments and conventions for conservation and sustainable development in the Seas of East Asia. This strong tri-national structure has become the vehicle to elevate SSME issues and accomplishments to broader platforms and to generate support for ECP implementation in the ASEAN Working Group on Nature Conservation and Biodiversity, the ASEAN Working Group on Coastal and Marine Environment, and the ASEAN Senior Officials for the Environment (which recognized the SSME Tri-Com in 2004). Moreover, regional programs and bodies such as the BIMP-EAGA, PEMSEA, ASEAN have noted with interest the progress made by the SSME Tri-Com. The CTI sees the SSME as a model in seascape conservation. One of the guiding principles of the CTI is to build on the foundation and institutions established in the SSME. Further analysis of the SSME Tri-Com is presented in Output 3.1.

58. In addition to the aforementioned SSME initiative of the three SCS countries, there are sub-regional, regional and international organizations and programs whose geographical scope covers the SCS. These include the Coral Triangle Initiative (discussed below); Association of Southeast Asian Nations (ASEAN); Brunei, Indonesia, Malaysia, Philippines-East Asia Growth Area (BIMP-EAGA); Southeast Asian Fisheries Development Center (SEAFDEC); Asia-Pacific Fisheries Commission, Food and Agriculture Organisation of the United Nations, WorldFish Center, Partnership in Environmental Management for the Seas of East Asia (PEMSEA); Coordinating Body on the Seas of East Asia (COBSEA); Conservation International (CI), World Wildlife Fund (WWF) and The Nature Conservancy (TNC). These organizations are potential international collaborators and partners in the sustainable management of the SCS.

Coral Triangle Initiative

59. CTI is a regional program by the governments of six countries (CT6) in the Coral Triangle area which include Indonesia, Philippines, Malaysia, Timor Leste, Papua New Guinea and the Solomon Islands. It is supported and carried forward by the CT6 countries with the support of multilateral agencies (GEF, ADB, UNDP, FAO, etc), bilateral donor agencies (e.g, USAID, AUSAID), civil society (NGO) and private sector partners. Overall, CTI aims to provide a major contribution toward safeguarding the marine and coastal biological resources of the region for the sustainable growth and prosperity of current and future generations. Its specific goals and objectives include the following a) Priority seascapes designated and effectively managed; b) Ecosystem Approach to Management of Fisheries (EBFM) and other marine resources fully applied; c) Marine Protected Areas (MPAs) established and effectively managed, including community-based resource utilization and management; d) Climate change adaptation measures achieved; and e) threatened species status improving.

60. On May 11-25, 2009, the World Ocean Conference (WOC) was held in Manado, Indonesia. This forum was intended for the countries of the world to discuss current issues in the marine sector which are related to climate change and how the world can wisely utilise the ocean to weather the economic and climate crises. In this conference, a CTI Summit was organized during the last day where the heads of state of the CT6 countries officially signed a CTI Leaders' Declaration. In addition to this Declaration, they agreed to formally launch a program on "Coral Triangle Initiative on Coral Reefs, Fisheries and Food Security and Adaptation to Climate Change" (CTI-CFFC), and by acclamation stated to adopt a Regional Plan of Action (RPOA)⁷⁰

61. Under the first goal of the RPOA, i.e., Priority Seascapes designated and Effectively Managed, Regional Action 1 aims to adopt a general model for the sustainable management of seascapes by working closely with existing seascape partners including the SSME Tri-Com to jointly adopt a set of "Key Elements for Sustainably Managed Seascapes". Also under first goal of the plan is Regional Action 2 which aims to establish seascape capacity-building and learning mechanisms which could include the Tri-Com and Sub-Committees of the SSME. The second goal of the RPOA is on the Ecosystem Approach to the Management of Fisheries and other Marine Resources Fully Applied. The SCS SFM is aligned to the Action under Goals 1 and 2 of the CTI RPOA. 62. With the CTI-CFFC, some member countries of CTI have committed to provide contributions for the implementation of RPOA and NPOA. In particular, Indonesia expressed financial support amounting to US\$5 million, PNG US\$2 million, the Philippines US\$5 million, and Malaysia US\$1 million. These commitments from the Coral Triangle member countries were not part of those provided by international donor agencies which have so far expressed their commitment, such as the USAID with committed funds amounting to US\$41.6 million, Global Environment Facility (GEF) amounting US\$63 million, and Australia amounting Aus\$2 million.

⁷⁰ Coral Triangle Initiative. 2009. Regional plan of action.

Stakeholder Analysis⁷¹

63. There are three types of identified stakeholders of the SCS-SFMP by management level: local, national and sub-regional stakeholders. In terms of organizations, the stakeholders include, among others, government agencies and offices, private and public learning institutions, business organizations, non-government organizations, people organizations, and coastal communities. By economic occupation, the stakeholders represent not only fishermen but also backward linkage participants of fisheries such as input suppliers and forward linkage participants such as fish processors and sellers of fish and fish products. In addition, stakeholders include participants in aquaculture and other economic activities in the coastal areas such as agriculture, forestry and mining which may have impacts or are impacted by fisheries in the SCS.

SCS Stakeholder Landscape

64. For Indonesia, the major national stakeholders of the SCS-SFM Project are the MMAF and its relevant subordinate fisheries offices such as the Marine, Coastal and Small Islands and Capture Fisheries and the Agency for Marine and Fisheries Research (AMFR). The important local stakeholders are the Provincial/District Marine and Fisheries Services and commercial and artisanal fishermen in the Indonesian side of the SCS. For Malaysia, the important national stakeholders are the DOF of the Ministry of Agriculture (MA) and its relevant offices including the Fisheries Research Institute (FRI). At the local level, the main stakeholders are the DOF Sabah of the Ministry of Agriculture and Food Industry and the commercial and artisanal fisheries in the Malaysian side of the SCS. For the Philippines, the major stakeholders are the Bureau of Fisheries and Aquatic Resources (BFAR) of the Department of Agriculture (DA) and the National Fisheries Research and Development Institute (NFRDI). The important stakeholders at the local levels are the provincial and municipal agriculture offices, the regional office of BFAR and the commercial and municipal fishermen in the Philippine side of the SCS. In addition to the above stakeholders, the environment agencies and offices of the local and national governments in Indonesia, Malaysia and the Philippines, particularly those involved in the management and conservation of marine resources in the SCS are important stakeholders of the Project.

Mechanisms for Stakeholder Participation

65. The results of the Stakeholder Participation Review and Analysis indicated that most of the stakeholders want the following modes of their participation in the SCS-SFMP to be given priority:

- a) Information Access and Sharing - The stakeholders in general want to be kept informed and updated of the progress and developments in the implementation of the SCS-SFMP. They also want that these updates could be availed by them on a timely basis through the best available means of communication.
- b) Opportunities to provide inputs- The local and national stakeholders want to be given the opportunity to provide inputs and comments on processes related to the implementation of the Project particularly those which result to outputs that they can significantly impact or can impact them. At the local level, the processes of importance to the stakeholders

⁷¹ As part of the preparatory stage for the development of this proposal, a Stakeholder Participation Review and Analysis was conducted to develop a Stakeholder Participation Plan (SPP) for the project. The SPP is presented in Section IV, Part III. The development of the list of stakeholders by country was done using information from existing relevant literature and key informants. A questionnaire was prepared and administered through personal and phone interviews with stakeholder representatives to generate information regarding the stakeholders' desired methods of potential participation in the project. Interviews were conducted to generate enough data and information from the stakeholders for their potential participation in the project.

are those that relate to the implementation of the Project demonstration sites and the strengthening of local institutions. At the national level, the stakeholders are particularly interested to provide inputs into the policy-making processes as well as those involving the strengthening of national institutions. At the regional level, the stakeholders are particularly interested in the strengthening of regional institutions and regional collaborative agreements.

66. In addition to the aforementioned, another mode of participation in the Project suggested by the stakeholders is their direct involvement in some activities of the Project or in the entire Project (Section IV, Part III). For example, educational institutions want to participate in the research and training activities of the Project both at the local and national levels. Local NGOs also want to participate in training and other capacity building activities as well as in the implementation of the demonstration sites.

Threats/Obstacles/Considerations Related to Stakeholder Participation

67. Threats and obstacles to the effective participation of stakeholders in the SCS-SFMP were identified based on the results of the Stakeholder Participation Review and Analysis. Some of the threats and obstacles were internal while the others were external to the institutions where the stakeholders belong. Furthermore, considerations regarding the appropriate mechanisms of stakeholder participation were identified. The threats, obstacles and considerations include: fund constraints; time constraints; limited facilities and power; rapid staff turnover; language barriers; large area coverage; limited training; large bureaucracy, and; conflicting objectives and mandates.

Stakeholder Participation Mechanisms

68. Given the aforementioned preferred modes of participation of different stakeholders in the Project and the potential obstacles to their actual participation, different mechanisms for participation were identified and proposed by stakeholders. These include: project website; project newsletter; regional/national/local meetings and symposia; regional/national working groups; e-mail listserves/group e-mail lists; on-line discussion forums; web-based information sharing tools; regional/national/local lessons learned meetings and consultations; communications strategy development and implementation; international workshop, and; training and capacity building (TCB) partnerships

Stakeholder Participation Monitoring and Evaluation

69. The stakeholders of the Project preferred a combination of mechanisms for generating and providing feedback regarding their participation in the Project. The proposed mechanisms are e-mail queries through the project newsletter. In addition, feedback will be generated and provided through periodic meetings among stakeholders.

70. The monitoring and evaluation of the levels of participation of stakeholders in the SCS-SFM Project could be done by conducting a detailed baseline assessment of the participation of various stakeholders at the beginning of the Project. This assessment will employ a questionnaire-based individual consultation and focus group interviews with a selected sample of stakeholders in each of the SCS countries. This activity could then be conducted again every two years until the end of the Project to generate data and information on the stakeholder participation levels over time. The results of the baseline consultation and later consultations will then be compared to ascertain the progress of stakeholder participation at the beginning, middle, and end of the duration of the Project.

Baseline Analysis

71. The preceding sections provided detailed description and analysis of the status of the economic, social political, policy and institutional dimensions in the three countries, with special reference to the fisheries sector in each of the three countries and regionally. The highlights of the analysis which provide the context for the SCS SFM Project are provided below.

72. SCS is a globally important LME with outstanding marine biodiversity. It has, arguably, the most diverse marine ecosystem in the world. This shared marine ecosystem provides an array of environmental services that benefits the three archipelagic countries surrounding it. It serves as an important source of larvae for major commercial fisheries such as small and large pelagic species (e.g., tuna). Coastal and marine habitats such as coral reefs also support fisheries and nature tourism, the latter becoming more important in each country. These economic activities, anchored on the diversity and ecological integrity of SCS, have provided livelihoods and food to the coastal population and recreation to both local and foreign visitors.

73. Despite their ecological and economic importance, coastal and marine resources in the SCS are at risk. Many of the millions of people directly dependent upon marine resources are living at subsistence levels in often impoverished coastal communities that lack basic social services. Various threats have been identified, including unsustainable exploitation of fisheries, habitat destruction and community modification, land-based and marine pollution, freshwater shortage, and global climate change. Growing human population in the three countries, particularly in the coastal areas have intensified resource exploitation, pollution, sedimentation and coastal development. More frequent and intense storms, sea level rise, warmer waters, and ocean acidification associated with Global Change are expected to aggravate these threats.

74. In the context of the fisheries sector, the prevailing situation in the SCS generally has been of over-fishing, destructive fishing and overall unsustainable exploitation of coastal fisheries resources. In the Philippines, for instance, about 70 percent of coral reefs are heavily over-fished. The landings of small pelagic fishes have declined in the last 10 years⁷². In Indonesia a significant increase in fishing effort has resulted to the overexploitation of certain pelagic species which contribute between 80 percent and 60 percent of the total production in North Sulawesi and East Kalimantan, respectively⁷³. Furthermore, in the Philippines and Indonesia, blast fishing and the use of destructive fishing gears have been rampant. In Malaysia, it has been reported by FAO that coastal fisheries are already fully exploited or possibly over-exploited forcing the government to impose some measures to reduce fishing effort which have not always been successful. The catch-per-unit-effort (CPUE) has declined and the estimated Maximum Sustainable Yield for small pelagic fisheries has been exceeded⁷⁴. The cutting of mangroves for fuel and aquaculture expansion has resulted to the destruction of nursery grounds of fish while the use of pesticides in agriculture has caused coastal pollution from water run-off.

75. The magnitude of these threats and their ecological and socio-economic impacts were severe in 2002 and will remain in 2020⁷⁵ without management intervention. The governments in the three countries recognize these impacts and awareness about the situation and efforts to address the threats are growing. In some locations, local fishermen have acknowledged

⁷² Resma, 2009

⁷³ Badrudin, 2009

⁷⁴ Cabanban, 2009

⁷⁵ UNEP, 2005

declining stocks, and national governments have acted to protect their marine wealth acting on their own and international donors and some industries are increasing their conservation investments in the region.

76. As early as the late 1990s, the three countries have started to work together to address the threats to the shared marine resources of SCS. The SSME ECP, formulated in 2001, embodies a common 50-year vision for biodiversity conservation and sustainable productivity of the SCS. The ECP was adopted in 2004 through the MOU that has been signed and ratified by the three countries in 2006. The MOU provides the guidance for the formation of the SSME Tri-National Committee in 2006, including three Sub-Committees that are tasked to implement the ECP. The Sub-Com on Sustainable Fisheries, at its second annual meeting in 2008, formally approved the preparation of this Project proposal for consideration by UNDP and GEF. This Project will pave the way for the implementation of an Action Plan for Sustainable Fisheries agreed on by the SSME Sustainable Fisheries Sub-Committee. The Project is expected to improve and stabilize marine fish populations in the SCS through formulation of appropriate policies. It will contribute to the expansion of regional cooperation to conserve and manage coastal and marine resources. It will enable the IMP to put in place sub-regional institutional measures to monitor the effectiveness of resource management measures, building on the Tri-National Committee for SCS.

77. Currently, the fisheries of concern to the SSME Sustainable Fisheries Sub-Com are the small pelagic fisheries. Trawl-fisheries, primarily targeting demersal fish stocks, are now being addressed by countries and regulations are in place. Large pelagic fisheries are all ready subject to numerous regional and international meetings and projects. Small pelagic fisheries have had very little attention from fisheries managers (except in the Malampaya Sound, Sulu Sea, Philippines where it collapsed). The landings of small pelagic fisheries contribute lesser volume of landings compared to trawl fisheries and lesser in terms of value compared to large pelagic fisheries but small these play an important role in the ecology of marine fisheries (predator-prey relationships) and in the socio-economy of Indonesia, Malaysia, and the Philippines⁷⁶. Small pelagic stocks are schooling and are not highly migratory as the large pelagic and are therefore likely shared-stocks among Indonesia, Malaysia, and the Philippines in the Sulu-Celebes LME. The large pelagic stocks like tuna are highly migratory and shared by the countries from Australia, north to Japan, and across the Pacific Ocean to the Americas. Moreover, the small pelagic fisheries employ many artisanal fishermen in Malaysia and the Philippines and generate export income for these two countries. The transboundary trade in small pelagic fishes in between Indonesia and Malaysia is profitable to Malaysian traders and important source of protein for the population in Kalimantan, Indonesia. For all these varied reasons, the Sub-Committee on Sustainable Fisheries decided that the focus of the Project is towards the regional management of small pelagic fisheries.

78. The catalytic support from GEF will enable the three countries through the SSME Sub-Committee on Sustainable Fisheries, to discuss and agree on joint priorities for marine fisheries, particularly on the small pelagics in the SCS. It is envisaged that through this Project, the persistent shared problem about the overexploitation of marine fisheries will be tackled jointly by the three countries thereby contributing to the objectives of the GEF and to sustainable livelihoods in the SCS.

⁷⁶ See Country Profiles for Indonesia, Malaysia, and the Philippines (Badrudin, 2009; Cabanban, 2009; and Resma, 2009)

PART II: Strategy

Project Rationale and Policy Conformity

79. The SCS-LME of the Indo-Malay-Philippines (IMP) archipelago is at the heart of the Coral Triangle and is among the world's most biologically diverse marine environments. The coral reefs, sea grass meadows and mangrove ecosystems contribute to the marine mega biodiversity of the LME. These ecosystems support considerable numbers and species of sea turtles, marine mammals, elasmobranchs, marine fishes, invertebrates, seaweeds and sea grasses and other less known but equally important marine flora and fauna. The Celebes/Sulawesi Sea, particularly the Moro Gulf and Sulu Sea have been known as a major spawning grounds for tuna.

80. Being at the heart of the most bio-diverse marine area in the world, the SCS is also a very rich fishing ground for large and small pelagic as well as demersal and reef fishes. The fishing industry supports an estimated 35 million (2002) people, expanding at 2-5 percent annually. The capture fisheries production alone is placed at over US\$1.0 billion a year. Moreover, the human populations in the SCS area rely heavily on its fisheries as the main source of animal protein and livelihood. Thus, fish is a vital food security item in the three countries.

81. The growing needs of the collective population of coastal areas, increases in economic activity and the limitations of the government to support conservation of ecological services, legislation and marine law enforcement have allowed various forms of threats to overcome the marine environment of the SCS. Specifically, these pressures include unsustainable fishing practices, destructive fishing techniques, negative impacts of mismanaged aquaculture practices, pollution and poorly planned and inappropriate land use. Barriers that limit local ability to address these threats include insufficient understanding of the connectivity of marine biodiversity and the ecological processes that support it, generally ineffective and under-supported conservation management and enforcement regimes, limited capacity, lack of coordination among natural resource managers, and economic incentives that favor short-term resource exploitation over sustainable use. The SCS fisheries is in a state of depletion wherein the number of fishing vessels operating is approximately thrice the number required to harvest the maximum sustainable yield (MSY) of the fishery resource. The situation in the SCS brings about low fisheries productivity, equity problems and undermined environmental integrity (see previous sections). Conservation or wise use of the fishery resources has therefore become a priority for the region.

82. The fundamental goals of conservation are the representation of natural communities, maintenance of viable population of species, sustainability of ecological processes that maintain biodiversity, and resilience in protecting blocks of natural habitat that can withstand disturbances. These goals can be realized in a large area, an ecoregion, as well as in smaller ecosystem units. Environmental threats that are transboundary can be better managed comprehensively and coordinated with regional and national actions. The actions can be planned according to ecological in addition to political considerations. Resources for conservation can be drawn from a wide-range of stakeholders and allocated efficiently according to needs.

83. The ecoregional planning for the Sulu-Sulawesi LME began in 1999 and culminated with the ratification of the ECP by the Governments of Indonesia, Malaysia, and the Philippines in 2006. The strategies to reach this Vision include (i) establishment of management strategies and coordinated institutions for effective ecoregional conservation; (ii) shaping economic

development compatible with biodiversity conservation; (iii) enhancing the understanding of biodiversity resources and factors affecting them to form basis for management decisions; (iv) building and enhancing capacity of stakeholders to effectively manage; and (v) improving of coastal, oceanic, and other types of fisheries resource condition and management by developing a framework strategy, institutions, and appropriate interventions. However, the implementation of the Action Plans emanating from the ECP has been met with financial constraints.

84. The Action Plan for Sustainable Fisheries within the ECP for 2008-2012 is directed to address overfishing, destructive fishing, and Illegal, Unregulated, and Unreported fishing. At the Second Annual Meeting of the Sub-Com on Sustainable Fisheries, the Sulu-Celebes Sea Sustainable Fisheries Management Project was agreed as the vehicle to address these issues in pelagics fisheries and Live Reef Fish Trade by applying ecosystem-based management. However, the Action Plan cannot be implemented completely due to lack of resources.

85. The GEF recognized the adoption of the SSME Ecoregion Conservation Plan and the establishment of the SSME Tri-Com as opportunities for advancing fisheries management in the Sulu-Celebes Sea LME. GEF through the UNDP approved the proposal for ecosystem-based management of fisheries and provided funds to prepare a full-sized project. Conservation International and the countries provided the matching funds for the preparation of this Project. The Sub-Com on Sustainable Fisheries approved at the Second Annual Meeting in 2008 the formally approved this Project.

86. The Sulu-Celebes Sea Sustainable Fisheries Management Project (SCS SFM) is consistent with CTI Regional Plan of Action for the Coral Triangle (draft of March 2009). The SCS-SFM is a Project that can meet Target #2 (Goal # 1) that marine and coastal resources within all "Priority Seascapes" are sustainably managed and can support the objective of Target # 2.1 (Goal # 2) Ecosystem Approach to Fisheries Management (EAFM) that marine fisheries are sustainably managed.

Project Goal, Objective, Outcomes and Outputs

87. The goal of the Project is to contribute to the sustainability of the economically and ecologically important fisheries in the SCS and their habitats, including its biodiversity and ecological processes, primarily for the benefit of communities that are dependent on these resources for livelihood. The objective of the Project is to improve the condition of fisheries in the SCS to a sustainable level through an integrated, collaborative and sustainable tri-national management. Best fisheries management practices on small pelagic fisheries will be demonstrated in pilot sites for subsequent upscaling of lessons learned to the entire SCS LME.

88. The Project framework is summarized in Part II: Logical Framework Analysis. There are 5 outcomes and 11 outputs that will contribute to the achievement of the objective and goal. These outcomes and outputs are described in detail in the succeeding sections.

Outcome 1. Regional consensus on transboundary priorities, their immediate and root causes

89. The Transboundary Diagnostic Analysis (TDA) is a science-based analysis of transboundary water-related concerns and opportunities that exist in multi-country surface water, ground water, and coastal/marine water systems. The TDA is used to identify priorities for joint action, root causes and scope for the concerns or opportunities, and serve as the basis for reforms and investments included in the action program (or Strategic Action Program, SAP). The

framework for TDA follows the Global International Waters Assessment (GIWA) in assessing and providing policy options to solving environmental issues in Large Marine Ecosystems around the world. The GIWA methodology is described in Annex 2.

90. The TDA will build on earlier studies spearheaded by WWF and GIWA. The ecoregional conservation planning approach of WWF and the GIWA Methodology are similar in goals, methods, and outcomes. The GIWA process includes Scaling, Scoping, Causal Chain Analysis, Policy Options Analysis, and preparation of the Strategic Action Plan. The first three steps are equivalent to the description of the ecoregion and the assessment of biophysical and socio-economic conditions prevailing in the area. In the ecoregional planning of WWF, the biophysical and socio-economic assessments were conducted by consultants and stakeholders in each country in 1999 and transboundary issues were identified, validated, and ranked in a tri-national workshop in 2001. The results of these assessments were used in the GIWA process, where scoping of all environmental issues were scored and ranked. The root causes of the environmental issues were identified in a problem-tree method with WWF or Causal Chain Analysis under GIWA. The preparation of the SAP is equivalent to the Ecoregion Conservation Plan for the ecoregion. Lessons learned from the GIWA process provided guidance in the preparation of the ECP.

91. The results of the Transboundary Diagnostic Analysis, conducted in 2002 were the same. The Causal Chain Analysis was focused only for one of the 5 environmental concerns – *Habitat and Community Modification*. Immediate and intermediate causes were identified and the root causes of all these are: population growth coupled with poverty; increasing demand; and economic growth. Population growth drives migration and urbanization, lack of employment, and poverty. These in turn impose increased pressure on the environmental services, e.g., fisheries, shelter, water source, and contribute to declining fisheries stocks, increased habitat destruction, increased pollution, illegal practices, and corruption. Increased market trends, especially for lucrative fishery products, drive the “burgeoning and unsustainable use of resources and also influence corruption and illegal practices”⁷⁷. The Causal Chain Analysis to determine the root causes of *Unsustainable Exploitation of Fisheries* is the concern of the Sulu-Celebes Sustainable Fisheries Management Project, but the three other environmental concerns (*Pollution, Freshwater Shortage, and Global Change*), have not been conducted.

92. The TDA process in the SCS-SFM will create a TDA consultative group consisting of about 20 members in each country drawn from the community of practitioners in fisheries biological, ecological and social sciences. The national-level SSME governance structure/body will be consulted in constituting the national consultative group. The consultative group will sign off on national-level outputs while the national SSME governance body will endorse the same. At the regional level, a group of 15 experts drawn from the national consultative groups will be invited to participate in the regional TDA processes. This group will sign off on the regional reports while the SSME Tri-Com through the Fisheries Sub-Com will endorse the same.

93. The SCS SFM will convene two tri-national, regional workshops during the first 6-12 months of the Project. The first regional workshop will define the geographic extent (Scaling) and determine the priorities (Scoping of Environmental Issues) pertaining to marine fisheries, i.e., coral reef fisheries, trawl fisheries, pelagic fisheries for small and large fishes, and the status of coastal and marine ecosystems that are habitats of fish communities (i.e., mangrove forests, estuaries, coastal waters). The second regional workshop will determine the root causes of the

⁷⁷ DeVantier et al., 2002

environmental and socio-economic drivers (Causal Chain Analysis) and to prepare a Strategic Programme of Action. Before each regional workshop, detailed analysis and consultations with stakeholders will be conducted on the issues in marine fisheries and coastal and marine ecosystems that were identified in the Profile of Small Pelagic Fisheries of Indonesia, Malaysia, and the Philippines⁷⁸, and in other background information on large pelagic and demersal fishes (i.e. from WCPFC, FAO). Global (climate) change will be investigated further in both workshops in the TDA of the SCS because of the growing and noticeable changes in monsoons in the region. More frequent and severe storms and flooding are occurring since 2002 that the impacts of this environmental concern is perceived as more than slight to moderate at present. The impacts of these changes on the marine fisheries are a concern of fishery sector in the region (e.g., changes in the migration of schooling pelagic fishes; more pollutants, that affect reproduction, flushed out from agricultural plantations; more and frequent storms affecting fishing activity of artisanal fishermen⁷⁹). Habitat destruction and community modification, Pollution, and other environmental concerns will also be investigated. The outcome of this process will be the common transboundary priorities, intermediate causes, and root causes of the decline of fisheries in the Sulu-Celebes LME.

94. The national activities will be coordinated by the National Coordinator and implemented by the Site Coordinator. Consultations, meetings, and workshops will be conducted among stakeholders. At the demonstration site level, biophysical and socio-economic data will be collected as required in the ecosystem-based management of fisheries and within the framework of the Integrated Coastal Zone Management⁸⁰. Opportunities to link up with current studies in the universities and with research institutions are encouraged to avail of knowledge gained from these projects and to achieve the maximum benefits for management (e.g., Southeast Asian Fisheries Development Center study on small pelagic fishes in the South China Sea; the FISH Project in the Philippines; the FAO-funded project on Ecosystem Approach to Fisheries Management and Small Pelagic Fisheries Management Project in Indonesia). The results of the consultations will be brought to the regional workshops by the National Coordinators, Site Coordinators, and three experts from fishery sector, the fishing community, and from the government.

Output 1.1 Consensus on the Transboundary Diagnostic Analysis

95. The national consultations will provide information for the regional workshops for Scoping, Causal Chain Analysis, and for the preparation of the Strategic Action Plan. The GIWA methodology will be used because it is not as expensive, requiring primary data collection, as conducting the Five-Modular Methodology for Large Marine Ecosystems (promoted by NOAA and adapted by GEF). The TDA of GEF and the GIWA Methodology are aligned in the Scaling, Scoping, and Causal Chain Analysis steps. The GIWA Methodology was used in the SCS in 2002 (see above) and the assessment of the SCS was projected to 2020 and

⁷⁸ Badrudin. 2009. The Profile of the Small Pelagic Fisheries of Sulawesi Sea, Indonesia. Xxxx pp. Cabanban, A. S. 2009. The Profile of the Small Pelagic Fisheries of Sabah, Malaysia. Xxxx pp. Resma, S. 2009. The Profile of the Small Pelagic Fisheries, Mindanao, Philippines. Xxxx pp. Copies of these reports may be requested from Conservation International, Philippines and the Sulu-Sulawesi Marine Ecoregion Sub-Committee on Sustainable Fisheries.

⁷⁹ Teh et al., 2006

⁸⁰ Please refer to the Policy Brief: Ecosystem-based Management and Integrated Coastal and Ocean Management and Indicators of Progress. 2008.

are thus valid for updating and building-up. The bottom-up process, from national to regional levels, will be conducted to ensure consensus in the TDA and the SAP. The TDA process and findings will be documented and published by the Sulu-Sulawesi Sub-Com on Sustainable Fisheries.

96. The TDA will be completed on the first year of the Project.

Delivery Indicators

- The task of preparing the TDA has been contracted out to Conservation International Philippine Country Office and the regional and national consultants have been hired to undertake the activities (Annex 3)
- A workplan, including consultations with appropriate stakeholders have been prepared.
- Various national and regional consultative groups have been created.
- Various national and regional workshops and consultations have been conducted as part of the TDA preparation and finalization.
- TDA has been completed by the end of the first year of the Project.
- The SSME Tri-Com through the Sub-Com on Sustainable Fisheries has endorsed the TDA report
- The governments of Indonesia, Malaysia and the Philippines have accepted the TDA report.

Outcome 2: Recommended regional and national legal, policy and institutional reforms for improved fisheries

97. This outcome will build on regional consensus with the approval of the SSME Tri-national Committee on the policy recommendations by taking into account the transboundary priorities and their immediate and root causes. Having agreed by respective SSME countries and gained approval from the SSME Tri-national Committee, the recommended legal, policy and institutional reforms to improve the status of the small pelagic fisheries will be formulated at the national and regional levels in accordance with respective national policies and provisions stipulated in the SSME MOU.

Output 2.1 – Strategic Action Program (SAP)

98. The Strategic Action Program will serve as a sub-regional framework for a prioritized set of national and regional actions to achieve the objective of improving the condition of fisheries in the SCS. The rationale for its preparation is the common understanding that fish stocks in the region are migratory whereby activities of one country within its territorial waters would have trans-national implications. This implies that effective management of fisheries requires regional action. The GEF published their Operational Strategy in 1996 which stated that the purpose of the SAP is as follows: *The SAP should establish clear priorities that are endorsed at the highest levels of government and widely disseminated. Priority trans-boundary concerns should be identified, as well as sectoral interventions (policy changes, program development, regulatory reform, capacity-building investments, and so on) needed to resolve the trans-boundary problems and regional and national institutional mechanisms for implementing elements of the SAP.*

99. The objective of the SAP is the conservation and sustainable exploitation of fisheries and habitats in the SCS. Its geographic scope covers the SCS region including the coastal and marine

areas and the upland, lowland, and intertidal areas which drain into the SCS. The economic scope of the SAP will encompass not only the fisheries sector but also other economic sectors that have important backward and forward linkages with fisheries, such as the suppliers of fisheries inputs and the distributors and sellers of fish and fishery products and other sectors that impact on fisheries like agriculture, forestry, and mining. The social scope of the SAP includes the artisanal and commercial fishermen households and other groups that impact or are impacted fisheries.

100. The formulation of the SAP will draw from best practices. During the first year of the Project, national and regional consultations will be conducted. The national consultations will be spearheaded by the national consultants and the national and local Project staff, in collaboration with the national-level SCS agencies while the regional consultations will be spearheaded by the regional consultants and the regional Project staff in collaboration with the tri-national committee and sub-committee on sustainable fisheries. Two national consultation workshops will be held in each country – the National Sector Problem Review Workshop and the National Environmental Priorities Review Workshop. These workshops will ensure that national representatives responsible for formulating the SAP fully understand the national concerns and priorities and accurately reflect them into the regional planning process. National workshop participants will include relevant stakeholders comprising of representatives of government at the local and national levels, communities, economic sectors, NGOs, research institutions, universities, among others.

101. The first national workshop, the National Problem Review Workshop will look into the main problems of the fisheries sector in each SCS country with focus on the small pelagic fisheries. The workshop will commence with the national consultants and selected experts making presentations on the status of overall and small pelagic fisheries, perceived main management problems encountered, causal chain from the perceived problems to their root causes, and the potential management actions to be undertaken. A follow-up workshop will validate the presentation of the experts and will identify other emerging issues that may have been missed. At the end of the workshop, the participants would have consensus on the problems and their causes, the potential management actions that can be undertaken, and the methodologies and approaches with which the problems and management actions should be tackled and analyzed.

102. The second national workshop, the National Environmental Priorities Review, will build on the first workshop. It will be attended by the same or similar representatives as in the first workshop to ensure continuity of discussions and consultations. With the guidance of the experts, the problems and issues and the potential management actions to address them which were earlier identified in the first workshop will be prioritized following an agreed methodology. In addition, an institutional analysis will be undertaken to look into the opportunities presented by existing institutional mechanisms to address the problems and implement the priority management actions. By the end of the workshop, each SCS country will have a set of prioritized problems and issues and corresponding prioritized management actions, an agreed methodology for prioritization and an analysis of the potentials and limitations of institutions to address the problems and implement their associated management actions.

103. Regional consultations will follow from the national consultations. A SAP Regional Planning Group will be formed to draft the SAP. The composition of the regional group will come from the SAP National Planning Groups that would have been formed by the participants in the second national workshop. The members of the national planning group are experts in

their own fields and are chosen to provide a wide range of skills and knowledge of national fisheries in general and small pelagic fisheries in particular. From among the national planning groups, the members of the regional planning group will select a Regional SAP Coordinator while the Project will serve as the Regional Planning Group Secretariat. Special Studies Teams will also be formed as the need arises to conduct background studies and related activities to support the regional planning group in drafting the SAP.

104. A major component of the SAP regional consultation process is the TDA (Outcome 1, Output 1.1) the results of which are the bases of the proposed regional and national policy actions of the SAP. Overall, the indicative sections of the SAP to be drafted are a) challenge, b) basis for cooperative action, c) regional and national policy actions, d) national strategic action plans, e) financing, and f) review and evaluation^{81,82}. Section (a) provides the challenge faced by the SCS countries which is to halt or reverse the deteriorating state of SCS resources through cooperative regional action and managing the ecosystem in an integrated and sustainable manner. Section (b) provides the principles of environmental management and social development; outlines the institutional arrangements needed for an integrated and sustainable management of the SCS; and highlights the wider cooperation necessary among all regional, national and local stakeholders in the SCS. Section (c) lays out the different national policy actions that the SCS countries can do individually and the regional policy actions that they can do together based on the results of the TDA. The remaining sections of the SAP provide a schedule for the preparation of national strategic action plans. These plans will provide details of additional actions at the national level. Furthermore, the SAP will provide discussion of the indicative sources of financing for the program and the potential arrangements for future cooperation among countries and institutions during and beyond the life of the SAP.

105. Furthermore, part and parcel of the SAP may include an activity directed at assessing the evolution of the SSME Tri-National Committee towards a permanent institutional set-up for the management of the SCS. This might be relevant given that the Memorandum of Understanding signed by the countries in 2004 specified that this Committee will exist up to 2016. With this time limitation, it may be necessary as will be determined by the three countries that a new, perhaps a more longer-term or permanent institutional arrangement would be established for SCS. Including other potential institutional structures, the SAP could consider an intergovernmental commission as the appropriate management structure for the SCS before 2016. The experience of other LMEs managed through a commission or any other alternative management structure would be an important basis in choosing the proper institutional set-up for the SCS.

106. The SAP is a “living” document. It complements the SSME ECP, by preparing a strategy to address issue of unsustainable exploitation of fisheries, which is one of the three programs of work to achieve the Vision of biodiversity conservation, sustainable use, and collaborative, participatory, and trans-boundary management. Future revisions of the document will be a regular activity in response to new developments. For instance, new economic activities in the SCS that negatively impact on resources may demand new responses. New research may generate results that will allow the refinement of proposed actions or highlight the need for more

⁸¹ United Nations Environment Programme. 2008. Strategic action programme for the South China Sea. UNEP/GEF/SCS Technical Publication No. 16.

⁸² Integrated Management, Sustainable Development and Protection of the Benguela Current Large Marine Ecosystem. 1999. Strategic action programme. Final Draft

interventions. The SAP would therefore lay out provisions that will allow for its revision or updating based from new realities and emerging developments.

107. The SAP is envisaged to be delivered towards the end of the second year of the Project. A review of the SAP, with the view of producing an update will be done towards the last semester of the Project. The process for reviewing and updating the SAP will take into account the accomplishments to date, emerging related developments at the regional and national levels and potential for mobilizing complementary resources to strengthen its implementation. The SSME Tri-Com and Fisheries Sub-Com will provide guidelines in this exercise.

108. Delivery Indicators

- The TDA-SAP regional expert and the legal and institutional experts, socio-economists, and fisheries biologists at the regional and national levels are hired to spearhead the SAP development process and the task of developing the SAP has been subcontracted to Conservation International (Annex 4).
- The various workshops, meetings, consultations, and other gatherings at the regional and national levels related to the SAP formulation, implementation and revision process are conducted.
- The SAP, including regional and national policy actions, national strategic action plans, and the rest of its component parts are formulated, agreed on by the three countries and to the extent possible implemented even partially during the duration of the Project.
- A system is put in place within the SSME structure to monitor the performance of the Tri-Com, Sub-Com on Sustainable Fisheries, and relevant national institutions in the implementation of the SAP in their respective areas of jurisdiction.
- A plan is developed for the implementation of the SAP for the duration of the Project. Among others, this plan will include sustainable financing for SAP implementation over the medium and long-terms.

Output 2.2 – Collaborative agreements with relevant regional and sub-regional organizations

109. The Project will establish collaborative agreements with relevant regional and sub-regional organizations in the pursuance of the objectives, outcomes, outputs, and activities of the Project as embodied in the ECP initially and eventually in the SAP. The collaborative agreements to be set up will be consistent and complementary to the themes of the mission and vision, programs, projects and activities of each organization. Collaboration should support the achievement of specific outcomes, outputs and activities of the Project or for the entire Project. Collaboration may also be done at all levels of management including regional, national, and local in the demonstration sites. The potential organizations to establish collaborative agreements may include government-based, quasi-government-based, and private-based including international non-governmental organizations. Currently, the regional and sub-regional organizations considered for potential collaboration with the Project are the Association of Southeast Asian Nations (ASEAN), Brunei, Indonesia, Malaysia, Philippines-East Asia Growth Area (BIMP-EAGA), Southeast Asian Fisheries Development Center (SEAFDEC), WorldFish Center, Partnership in Environmental Management for the Seas of East Asia (PEMSEA), Coordinating Body on the Seas of East Asia (COBSEA), and the international NGOs such as CI, WWF, and The Nature Conservancy (TNC). Of particular interest to the Project is the Coral Triangle Initiative to which this Project belongs. Closer collaboration in the conduct of the activities will be sought and the Project will seek guidance from the CTI Secretariat and

mechanisms that will be set up by the program for monitoring and evaluation and coordination of activities at various levels.

110. As stock assessment and its corresponding methodologies are important to the management of fisheries resources including small pelagics, the Project will endeavor to establish collaborative agreements with research-based fisheries institutions in the region. An important institution in this regard is SEAFDEC which has the Marine Fishery Resources Development and Management Department (MFRDMD) in Malaysia for the development and management of the marine fishery resources. The Project will therefore explore potential and establish collaborative agreements with SEAFDEC as a whole and MFRDMD specifically particularly in relation to stock assessment research in the SCS including but not limited to CPUE estimation and related activities.

111. The exploration and establishment of collaborative agreements will be one of the main functions of the Regional Program Manager (RPM) assisted by the technical program assistant who will both be hired for the entire duration of the Project. The RPM will work closely with the SSME Tri-Com and the Sub-Com on Sustainable Fisheries in the pursuance and establishment of collaborative agreements with regional and sub-regional organizations. He will coordinate with the national working groups/presidential commission of the SCS countries in the conduct of this function. Furthermore, he will not limit the potential collaborative agreements to the aforementioned regional and sub-regional organizations but will consult with other international organizations for potential tie-ups and collaborations in the implementation of the Project.

112. This output will be delivered over the life of the Project with the timing dependent on the readiness of the other organizations to endorse such agreements. The Project, through the SSME Tri-Com and Fisheries Sub-Com will take a pro-active stance in seeking collaborative agreements with appropriate organizations.

113. Delivery Indicators

- Exploratory meetings and consultations have been conducted with regional and sub-regional organizations on the possibility of establishing cooperative agreements related to the Project.
- Formal negotiations have been conducted with regional and sub-regional organizations on the establishments of cooperative agreements related to the Project.
- Formal collaborative agreements have been established and signed with regional and sub-regional organizations related to the Project.
- Formal collaborative agreements with regional and sub-regional organizations have been implemented related to the Project.
- The implementation of formal collaborative agreements with regional and sub-regional organizations related to the Project has been periodically reviewed.
- Exploratory meetings and consultations have been conducted with regional and sub-regional organizations on how new collaborative undertakings can be done beyond the life of the Project.

Outcome 3: Strengthening of existing institutions and introduction of reforms to catalyze implementation of policies on reducing overfishing and improving fisheries management in the SCS and strengthening national fisheries laws and policies

114. This outcome will address institutional and related challenges at the national and regional levels to ensure that the SSME governance structure will be able to implement the SAP and other activities of this Project as well as its other initiatives. Two related outputs, described below, will contribute to this outcome.

Output 3.1 – Strengthened SSME Tri-Com for the SCS and its Sub-Com on Sustainable Fisheries

115. The structure of the SSME Tri-Com and its sub-committees is described earlier sections. Since its formation until the present, there have been concerns raised about the sustainability of the Tri-Com and its three sub-committees as a management body of the SCS. It has been argued that the way they are now, these management organizations and the entire SSME program is a forum to coordinate and harmonize the implementation of the ECP that is currently agreed to exist until 2016.. It has been opined as well that institutional design was not given explicit focus in the negotiations leading to the formation of the Tri-Com and its subordinate bodies⁸³. It was subsequently proposed that for the SSME program and its management organizations to be sustainable, a continuing process of visioning and definition is needed and which must be built into the design of SSME institutions. This process should give due consideration to the long-term needs of the SCS and how the SSME program can transcend short-term concerns such as transient politics. Furthermore, the process must not only involve scientists from marine biology which mainly promotes habitat conservation as the dominant issue in SCS management but other stakeholders and representatives such as those from sectors of pollution control, chemical engineering, socio-economics, institutional design and other fields of relevance to SCS management.

116. A preliminary Strengths, Weaknesses, Opportunities, Threats (SWOT) analysis among members of the SSME Tri-Com and Sub-Com on Sustainable Fisheries was conducted for the purpose of identifying relevant institutional issues related to the Tri-Com and Sub-Com on Sustainable fisheries which can then be raised in this Project document. The SWOT analysis was enhanced by key informant interviews with selected members of the Tri-Com and Sub-Com on Sustainable Fisheries. In the SWOT analysis, the objective of the Tri-Com and Sub-Com on Sustainable Fisheries was identified as improving the condition of fisheries and their habitats in the SCS, particularly small pelagic fisheries, to a sustainable level through an integrated, collaborative sustainable management.

117. The identified strengths of the SSME program and its regional management organizations are as follow: completion and ongoing implementation of the ECP; energetic cooperation and involvement of national government organizations and other national stakeholders; active involvement and allocation of some funding by international NGOs; high level of technical expertise of the national and regional participants; and close working relationships among the national and regional participants. The identified weaknesses include limited or lack of funding, manpower and overall resources, lack of an effective and permanent secretariat for the Tri-Com,

⁸³ Lejano, R. P. 2006. The design of environmental regimes: social construction, contextuality and improvisation. Received: 16 December 2004/Accepted: 8 May 2006, Springer Science+Business Media B. V. 2006.

limited knowledge and training of members of the Sub-Com on Sustainable Fisheries in small pelagic fisheries management, limited electronic information and communication mechanisms between the regional, national and local stakeholders, limited exposure in regional and international forums, networking with other regional and international organizations, lack of monitoring, surveillance and control (MEC) activities, and lack of performance evaluation of the SSME program and its regional management organizations.

118. The SWOT analysis and key informant interviews identified the opportunities of the SSME program and its regional management organizations as follows: potential use of the CTI, ASEAN and BIMP-EAGA as a platform and springboard of SSME activities; potential participation of the SSME program in the “common fishing area” in the SCS currently conceptualized by the BIMP-EAGA, potential participation of and collaboration with other international NGOs and organizations in the SSME program, potential funding of the SSME program and/or its specific activities by international donor organizations like the GEF and UNEP and potential tie-ups with the private sector at the regional level. The identified threats are as follow: complicated process to arrive at consensus on maritime boundary delimitation between SCS countries which can potentially impede regional cooperation, security problem in the SCS which can potentially limit SSME program activities, current worldwide financial crisis which may reduce funding from international donors and other fund sources, occurrence of epidemic diseases such as the current international occurrence of swine flu which may limit the regional movements of personnel and stakeholders in the implementation of the SSME program.

119. The SWOT participants and key informants agreed that measures have to be undertaken at the regional level to minimize the problems and threats and exploit the strengths and weaknesses faced by the SSME program and its regional management organizations. As an important activity along this line, the Project will consider the different issues through a formal institutional study. Specifically, the Project will hire a regional institutional, monitoring and evaluation specialist on a consultancy basis for the entire duration of the Project to undertake a study on the policy, legal and institutional improvements that need to be done to strengthen the Tri-Com and the Sub-Com on Fisheries, develop a plan to monitor and evaluate the performance of these management organizations and the Project as a whole and take the lead in implementing it. The study on institutional improvements will focus among others on the right secretariat model for the Tri-Com based on experiences of other organizations and other available information⁸⁴. It will also assess the feasibility of bilateral agreements between the SCS countries to support the management of the fisheries and other coastal and marine resources in the region. The Project will also hire a resource mobilization specialist to develop a plan for the sustainable financing of the SSME Tri-Com, Sub-Com on Sustainable Fisheries and the Project as a whole and take the lead in implementing the plan, and generating funds.

120. Furthermore, the Project will recruit three coordination support specialists assigned in each of the three SCS countries with the host country serving as chair, to serve as the focal persons for coordinating the activities of the Tri-Com among and the countries. These personnel will also be responsible for doing the same coordinating function with the international, regional, national and local partners of the Tri-Com as the need arises. Moreover, the Project will recruit three Sub-Com/national coordination support specialists, hired on a consultancy basis and one assigned in each of the three SCS country, to serve as the focal persons for coordinating the activities of the Sub-Com on Fisheries among SCS countries. These personnel will also be responsible for doing the same function with the international, regional, national and local

⁸⁴ Asian Development Bank. 2008. Regional program secretariat models. ADB Technical Assistance Report, December 2008. Draft

partners of the Sub-Com on Fisheries as needed. Lastly, these personnel will plan the training of members of the Sub-Com on Sustainable Fisheries and other personnel on the management of small pelagic fisheries and take the lead in implementing the plan.

121. This output will be delivered starting from the second semester of the first year of the Project and will continue throughout the life of the Project.

122. Delivery Indicators

- The regional institutional, monitoring and evaluation specialist, regional resource mobilization specialist, three Tri-Com coordination support specialists, and three coordination support specialists for the Sub-Com on Sustainable Fisheries have been hired.
- The plan for generating sustainable funding and other resources for the operation of the Tri-Com, Sub-Com on Fisheries and the Project is completed, implemented and funds are actually generated.
- The study on the policy, legal and institutional improvements to strengthen regional organizations involved in the management of the SCS is completed and/or its recommendations are implemented.
- The feasibility analysis of bilateral agreements to support fisheries and other coastal and marine resources has been conducted and reported and a set of recommendations are put forward to the SSME Sub-Committee on Sustainable Fisheries.
- The plan for the technical training of Sub-Com on Sustainable Fisheries members and other staff on the management of fisheries and other concerns are completed and implemented.
- The plan for the monitoring and evaluation of the progress and performance of the Tri-Com, Sub-Com on Fisheries and the Project is completed and implemented. Results of implementation are also analyzed and necessary changes are made to improve performance.
- The constraints faced by the Tri-Com and Sub-Com on Fisheries are sufficiently addressed leading to a more efficient and effective management of the SCS resources in general and small pelagic fisheries in particular.

Output 3.2 – Strengthening of existing national inter-ministerial committees for effective implementation of the agreed action programs for SCS

123. An analysis of the challenges and opportunities in transboundary governance is presented in earlier sections. Interviews with national key informants from the three SCS countries indicated common problems faced by national institutions involved in SCS management. The national technical working groups/presidential commission are supported by secretariats that are actually composed only of one person who performs secretariat duties in addition to usual office duties. On top of resource constraints, there are other institutional problems that beset national institutions involved in SCS management. Although members of the technical working groups/presidential commissions are generally at the high ministerial/departments levels, actual attendees of meetings and consultations are actually their designated middle-level representatives who might not be able to make outright decisions.

124. Recognizing the need to strengthen the existing national working groups/presidential commission (ref: paragraph 56) for the implementation of the project and the management of the SCS, during the first year of the Project, the three sub-com/national coordination support

specialists will conduct meetings and consultation in each of the SCS countries to develop measures to address the institutional and related problems these national institutions are facing. Once the measures are formulated, the national working groups/presidential commission and the relevant national /ministries/departments will implement them for institutional strengthening. The three sub-com/national coordination support specialists will develop the plan for the conduct of technical trainings among the staff of the national presidential commission/technical working groups who are involved in SCS management. The three sub-com/national coordination support specialists, regional program manager and project assistants (refer to project implementation arrangements) will take the lead in the implementation of the national technical training plan in the three SCS countries.

125. This output will be delivered starting from the second semester of the first year of the Project and will continue throughout the life of the Project.

126. Delivery Indicators

- Meetings and consultations in each of the three SCS countries are conducted to develop specific measures for the strengthening of the national technical working groups/presidential commission.
- Specific measures are implemented at the level of the national technical working groups/presidential commission and the different national departments/ministries involved in SCS management.
- The plan for the technical training of national government staff in the departments and ministries of the three countries involved in the management of the SCS are completed and implemented.
- The constraints faced by the national technical working groups/presidential commission are sufficiently addressed leading to a more efficient and effective management of the SCS fisheries and small pelagic resources.

Outcome 4 – Increased fish stocks at demonstration sites (5-10 percent increase)

127. The Project, within the context of the TDA and SAP, will aim to promote and adopt an integrated fisheries management approach of Growth, Control, and Maintenance (Box 1) mechanisms to achieve the target of increasing fish stocks at demonstration sites and replication sites. The GCM approach will be applied in the collaborative, integrated, and participatory management of the small pelagic fisheries while the SAP for marine fisheries is being prepared (*Outcome 2*). This decision to manage small pelagic fisheries, using a suite of G, C, and M tools within an Integrated Coastal Management (Box 3) framework is based on the need for management intervention of this coastal fishery⁸⁵.

128. The strategy to meet the Goal is to establish demonstration sites (*Output 4.1*) in the three countries during the first year of the Project. In each demonstration site, an ICM Plan will be prepared (*Output 4.2*), which will apply maintenance mechanisms by the second year of the Project. A multi-sectoral committee will be created to enforce the ICM Plan and to endorse and support its implementation (*Output 4.3*). The ICM plan will be prepared and implemented by the

⁸⁵ The Sulu-Sulawesi Marine Ecoregion Sub-Committee on Sustainable Fisheries decided at their second inter-governmental meeting in Kota Kinabalu, Sabah in 2008 to focus on the small pelagic stocks that is easily and heavily exploited by coastal communities but there is very little attention to the small pelagic fisheries in the region. The Project Preparation Grant (UNDP, GEF) provided for funds to undertake tasks for the preparation of the profile of small pelagic fisheries.

third year the Project (*Output 4.4*). All these activities will proceed ahead of the completion of the TDA and SAP, which in an ideal situation, should have been guided by these two outputs. It is noted, however, that much of the activities during the first two years of the Project that will contribute to this outcome pertain to mobilization and consultations with the stakeholders, which will include the women sector and indigenous ethnic groups. Eventually, the outputs from the site-based activities will be enriched and guided by the results from the TDA and the SAP. Moreover, the projected outcome of increased fish stocks at 5-10% in the demonstration sites requires early preparation and work at the site level.

129. Catch per unit of effort (CPUE) and income from fishing and non-fishing activities will be used as the indicators of improvement in the stock of small pelagic fishes. These are indirect measures using fishery statistics but are commonly used by fisheries managers to monitor the impacts of management due its manageability and lower cost. The procedure to collect the baseline CPUE, the monitoring protocol to collect fisheries statistics, and analytical procedure will be discussed and agreed upon at the inception of the Project. This activity will be implemented with the preparation of the fisheries management plan, within the framework of Integrated Coastal Management (ICM), in *Output 4.2 and 4.3* (see below). However, in view of the limitations of CPUE⁸⁶ to indicate improvement of stocks, fishery-independent data and information may be gathered subject to the availability of cofinancing for this purpose, which may be secured during Project implementation. Additional data will be gathered from natural and social sciences. Monitoring of stocks will be planned to include temporal and spatial scales. Evaluation of the management strategy and adaptive management will be conducted in the multi-species small pelagic fishery. Data on CPUE and incomes from fishing and non-fishing sources may be interpreted with these important bases for ecosystem-based management.

130. The lessons learned in this sequence of steps will be documented and followed in the Replication Sites (*Output 4.5*) and will be disseminated within the SSME, the Coral Triangle, and the world.

131. Delivery Indicators

- The delivery indicators for this outcome are described in each of the five outputs described below.

Box 1
Growth, Control and Maintenance Approach

Growth mechanisms enhance fisheries production and marine ecosystem integrity. Among these are the establishment of networks of resilient marine protected areas (MPAs) for critical habitats and open water areas to protect spawning, migration routes, populations of mature fish, endangered species and other resources with no-take fish sanctuaries and management zones. Environment-friendly economic development and revenue-generating systems shall be encouraged, such as marine ecotourism, user-fee systems and appropriate aquaculture.⁸⁷ This latter approach is desired to diversify the sources of income of fisherfolks so that they will not

⁸⁶ Maunder, M. N., J. R. Sibert, A. Fonteneau, J. Hampton, P. Kleiber, and S. J. Harley. 2006. Interpreting catch per unit data to assess the status of individual stocks and communities. *ICES J. Mar. Sci.* 63:1373-1385.

⁸⁷ The Fisheries Improved for Sustainable Harvest (FISH) Project, 2003-2010.

become too dependent on capture fishing for livelihood, thereby contributing to the reduction of fishing pressure on marine fish stocks.

Control mechanisms are geared towards appropriate allocation of access to fisheries and coastal resources. The main objective of this approach is to regulate the fishing pressure and therefore reduce the stress on the fish stocks. Among these is the identification of restrictions on fishing gear, fish catch size limits, fishing areas, and seasons to achieve sustainable fishing based on the results of baseline assessments, critical threats analysis and stakeholder planning. This approach aims to address the problem of excess fishing effort by reducing the current fishing fleet operating in the SCS. This may be done through the combined methods of effective prevention of IUU fishing, selective moratorium on the issuance of new fishing vessel licenses, strict implementation of registration and licensing regulations and active monitoring and law enforcement systems. The registration of fishers and issuance of licenses for fishing boats and gears (artisanal and commercial) shall be based on estimated sustained yield of fish stocks. Ideal to be established is a legislated licensing system for commercial fishing vessels to operate in areas where sustainable yields of fish stocks can be expected and regulated. To be pursued also is the implementation of active monitoring and law enforcement systems. Training of coastal enforcement units shall regularly be conducted for them to effectively enforce fisheries and other coastal resource-related laws.

The **Maintenance** mechanisms deal with management planning, capacity building, institutional development and strengthening, inter-local government unit management arrangements and private-public sector partnerships using Integrated Coastal Management (ICM) models developed for the region.⁸⁸ This approach will improve institutional capacity for fisheries and coastal resource management. Among the activities to be undertaken, where appropriate, are: development of ecosystem-based fisheries management program to address critical threats to fisheries and other coastal resources; clustering of local government units (LGUs) into viable fisheries and coastal resource management units in association with inter-agency and multi-sectoral collaborative mechanisms for planning, implementation and enforcement; assistance to stakeholders in the integration of population and reproductive health programs in fisheries management; identification of appropriate and efficient market-based incentives for compliance and investments in sustainable fisheries; and, promotion of public-private partnerships for fisheries management.

Output 4.1 – Establishment of one demonstration site and another replication site for each country

132. The application of the integrated **Growth, Maintenance, and Control** mechanisms for fisheries management will be demonstrated in 3 sites in Indonesia, Malaysia, and the Philippines. The Demonstration Sites have been selected using a set of criteria (Annex 5). The lessons learned in the Demonstration Sites will guide the fisheries management in the Replication Sites.

133. The demonstration sites and replication sites in each country are listed below.

Indonesia

⁸⁸ Partnerships in Environmental Management for the Seas of East Asia (1994-2010): A Regional Mechanism Facilitating Sustainable Environmental Benefits in River Basins, Coasts, Islands and Seas. 78 pp. 2007. PEMSEA.

Demonstration Site – Tarakan, Kalimantan
Replication Site – Kwandang, Sulawesi

Malaysia

Demonstration Site – Semporna, Southeast Fishing Zone, Sabah
Replication Site – Sandakan, Northeast Fishing Zone, Sabah

Philippines

Demonstration Site – Zamboanga, Mindanao
Replication Site – Bongao, Tawi-Tawi

The detailed description of each of the Demonstration and Replication sites, including the criteria used in the selection are in Annex 5.

134. Delivery Indicators

- Fisheries management plans are prepared, led, and implemented by fisheries management agencies in the countries.
- Fisheries management plans are adopted by government agencies as part of the Integrated Coastal Management Plans in Indonesia and the Philippines; fisheries management plans are referred to by government agencies in enforcing the Shoreline Management Plan and the Sabah Structure Plan in Sabah, Malaysia.
- Agreements with the local government partners in the demonstration sites have been formally established with the Project. The agreements could be in the form of MOUs that will outline the responsibilities of the Project and the local government over duration of the Project.
- Cofinancing agreements, indicating the resources provided by the Project and the counterpart funding by the local government partner in the demonstration sites, have been reached as part of the MOU or as a separate document.
- The MOUs and cofinancing agreements have been initiated in replication sites before the end of the Project.

Output 4.2 – Integrated coastal management (ICM) plans for fisheries management, prepared and implemented at each demonstration site and initiated at each replication site

135. Consistent with the objective of the Ecosystem Approach Fisheries management (EAFM), the Growth, Control, and Maintenance mechanisms for fisheries management can be implemented under the Integrated Coastal Management (ICM) framework. The steps to prepare the ICM plan will follow accepted procedures (Box 2) and the Stakeholders Involvement Plan (Section IV, Part III).

136. In Indonesia, the integration of fisheries management considerations will be included in the Integrated Coastal Zone Management⁸⁹ Plan at Tarakan District Indonesia. The fisheries officers of Tarakan, with guidance and support from the Ministry of Marine Affairs and Fisheries, Jakarta, will be engaged actively in the process.

⁸⁹ The Ministry of Marine Affairs and Fisheries enacted two decrees on Integrated Coastal Management and Sustainable Small Island Development in 2001 (Siry, H. Y. 2006. Decentralized Coastal Zone Management in Malaysia and Indonesia: A comparative perspective. Coastal Zone 34:267-285.).

137. In Malaysia, the fisheries management plan will be prepared by the Department of Fisheries. An Integrated Coastal Zone Management will be prepared under the Tawau Division of the Sabah State Government, which is composed of the Tawau Municipality, Semporna District, Kunak Municipality, and Lahad Datu District, with reference to the Shoreline Management Plan and Sabah Structure Plan and in coordination with the Land Use Committees of the Districts and Municipalities. The ICM plan will be focused on conserving coastal and marine habitats of fishes and in reducing pollution that impact on the fishing grounds. Fisheries officers in these Municipalities and Districts and from the Department of Fisheries, Sabah Headquarters will be engaged actively in the process in the ICM process in order to integrate the fisheries sector in the ICM.

138. In the Philippines, the Integrated Coastal Management Plan will be prepared under the Zamboanga del Sur Province. The Regional Office of the Bureau of Fisheries and Aquatic Resources and the fisheries officers in the Local Government Units will be engaged actively in the process.

139. In all three countries, the fisheries officers will bring to the planning discussions the information gathered from *Output 4.3* and the recommendation for the appropriate and specific Growth, Control, and Maintenance mechanisms for fisheries management that will be included in the ICM Plan. A The data and information gathered in the process of establishing the ICM in the demonstration sites, particularly on research on essential policies to fill knowledge gaps (Step II, 4, Box 2) and harmonization of governance mechanisms, legislation and promulgation of new regulations (Step IV, 3, Box 2) will be input in the preparation of the Strategic Action Plan.

140. Delivery Indicators:

- Baseline and other information necessary for the preparation of the ICM plan have been collected from secondary and primary sources of information in each demonstration site
- Consultations with all relevant stakeholders have been conducted in the context of the formulation and adoption of the ICM Plan in each demonstration site
- The local ICM Plans for fisheries management that is consistent with EAFM, following the ICM principles, and GCM approach, and steps and activities have been prepared in each demonstration site
- The local ICM Plans have been formally adopted through an appropriate local legislation in each demonstration site
- ICM plans in the demonstration sites have been implemented and its progress monitored
- The above activities have been initiated in the replication sites before the end of the Project

Box 2

Integrated Coastal Management Principles, Steps, and Activities

Integrated Coastal Management (ICM) is defined by the Subsidiary Body for Scientific, Technical and Technological Advice of the Convention on Biological Diversity as: “.. *the participatory process for decision making to prevent, control, or mitigate adverse impacts from human activities in the marine and coastal environment, and to contribute to the restoration of degraded coastal areas. It involves all stakeholders, including: decision makers in the public and private sectors; resource owners, managers and users; non-governmental organizations; and the general public.*”

The Conference of Parties acknowledged “integrated coastal and marine management as the most suitable strategy for strategic management of human impacts on marine and coastal biological diversity and for promoting conservation and sustainable use of this biological diversity”. The development of ICM plans in the demonstration sites will be guided by the lessons learned for each of the steps in the ICM cycle.

Guiding Principles:

1. Use integrated approaches and methods.
2. Stakeholder participation in all phases of the ICM program
3. Program focus and decision-making is strategic and issue-driven
4. Commitment to adaptive learning

Step I: Identify issue and conduct assessment

1. Rapid assessments of existing conditions and identify biodiversity “hot spots”
2. Identification of and consultation with stakeholders, to build consensus on priority issues
3. Formulation of program goals

Step II: Prepare program

1. Selection of issues to be addressed and geographic focus
2. Documentation of baseline conditions
3. Selection of indicators and monitoring of trends for selected issues
4. Conduct of essential policy relevant research to fill knowledge gaps
5. Conduct of sustained public education and participatory consultation process
6. Pilot implementation
7. Development of Action Plan: define management objectives; strategies; actions and costs
8. Creation of capacity for implementation

Step III: Formal adoption of program and funding

1. Formal adoption of strategic action plan for conservation
2. Securing adequate funding for conservation

Step IV: Program Implementation and Monitoring

1. Promotion of compliance to regulations and agreements
2. Construction or operation of infrastructure
3. Harmonization of governance mechanisms, legislation and promulgation of new regulations
4. Monitoring of specific targeted indicators of impact to note effects of project activities

Step V: Evaluation

1. Evaluation, gathering of lessons learned and program adjustment

Notes/References:

Nakashima, S. 1997. Integrated Coastal Management as Best Practice for Project Development: Lessons learned from selected biodiversity projects in Marine, Coastal, and Freshwater Ecosystems. New York: United Nations Development Programme and Global Environment Facility. 72 pp

All activities listed here are from Framework for Integrated Coastal Management Policy Cycle in: Olsen, S. and J. Tobey. 1996. *Application of Prototype Evaluative Instruments to the Patagonia Coastal Management Program*. Coastal Resources Center, University of Rhode Island, Narragansett.

Output 4.3 – Establishment of new or strengthening of existing local inter-sectoral committees for effective implementation of local ICM plans

141. An inter-sectoral committee will be established for the effective implementation of the ICM Plans in the demonstration sites. The Site Coordinator will facilitate the formation of this committee and will build on existing institutional and governance frameworks for each site taking into account national and local legislation. In the Philippines for instance, the establishment of local Fisheries and Aquatic Resources Management Councils (FARMCs) is mandated by law. The FARMCs in the demonstration and replication sites in the Philippines, and similar institutions in Malaysia and Indonesia, could serve as the inter-sectoral committee mentioned in this output. Where such institutions exist, the focus of activities will be on strengthening the capacity of these institutions.

142. The formation of local committees will involve meetings with the Mayors and District Officers that have jurisdiction over the fishing zone, the fishing activities, and other sectoral activities that impact on the small pelagic fisheries. The meetings will explain the concept of integrated management and the need for the establishment of inter-sectoral committees to implement the local ICM Plan. Once understanding and consensus are reached at each Demonstration site, the local inter-sectoral committees will be formed. The target is to establish an inter-sectoral committee at each Demonstration site composed of fisheries managers, fisheries operators, fishermen's representative, government planners and engineers, researchers/academicians, property developers, forestry officers, environmental protection agencies, and energy and tourism sectors, where applicable. The role of the inter-sectoral committee and the specific responsibilities of each sector will be prepared.

143. The capacity strengthening will take the form of trainings, participation in and overseeing the preparation and implementation of the ICM plan and, where applicable, field visits and staff exchanges in coastal government units which have successfully implemented ICM or similar plans.

Delivery Indicators

- The composition of the local inter-sectoral committees has been identified and representation has been finalized.
- The local committees have been formally organized and have been conducting regular meetings to oversee the preparation and subsequent implementation of the local ICM plans.
- The local committees have been capacitated and actively interacting with the project staff providing direction in the implementation of the Project, particularly at the local level.

Output 4.4 – Better understanding of stocks of small pelagic fisheries in the SCS, to include the following: a) estimates of populations levels of target species/groups; and b) biology and ecology of target groups of small pelagic fishes

144. Regional fisheries management of small pelagic fisheries in the Sulu-Celebes Sea will require information on the nature of the stock/s whether the stocks are transboundary. This activity (of defining the stock/s) will be conducted using molecular techniques or other approaches, subject to the availability of cofinancing. The target species will be the same, but

not limited to, as those being investigated by SEAFDEC⁹⁰. Samples of the species will be collected in several sampling sites in each country and will be analyzed preferably by a single laboratory within the region, for consistency in the procedure and accuracy of the results. The gathering of samples will be conducted in cooperation of the fishing industry. More details of this activity will be finalized at the Inception Meeting of the Sulu-Celebes Sea Sustainable Fisheries Management Project.

145. Information at the Demonstration Sites will be gathered to provide support to the fisheries management plan, particularly for the appropriate **G** and **C** mechanisms. **Growth** mechanisms, *i.e.*, protection of stocks with no-take fish sanctuaries and management zones, require information on the biology and ecology of the target species, *e.g.*, spawning season, spawning grounds, migration routes, populations of mature fish. **Control** mechanisms, *e.g.*, identification of restrictions on fishing gear, fish catch size limits, fishing areas, and seasons to achieve sustainable fishing, will be gathered. The biological and ecological information, including the ‘carrying-capacity of fishing grounds’ or the acceptable fishing effort (fishing mortality) will be gathered at the Demonstration Sites and will provide the basis for fisheries management, by conducting baseline assessments, critical threats analysis, and stakeholder planning. Estimates of populations of small pelagic fisheries will provide an independent assessment of the small pelagic fish stocks and baseline information in establishing **Control** mechanisms. Collaboration with interested research institutes and academic institutions within Country is encouraged in these activities⁹¹. Details in the conduct of the baseline assessments, threat analysis, and stakeholder planning will be discussed at the Inception Phase of the SCS-SFM Project (see also Section IV, Part III – Stakeholder Involvement Plan).

146. Through the proposed research studies, the transboundary nature of the stock will confirm the general perceptions that the small pelagic stocks are migratory resources and an estimate of the size of the stock and populations. These studies will be conducted in collaboration with national and regional institutions (such as SEAFDEC, Marine Science Institute, University of the Philippines, National Mapping and Resource Information Authority (NAMRIA), Malaysian Centre for Remote Sensing (MACRES), National Coordinating Agency for Surveys and Mapping, Indonesia). Fish population dynamics studies, coupled with multidisciplinary studies on biology and ecology species, populations, and communities of small pelagic fishes will be conducted at the Demonstration Sites. The target is for these studies to be completed in the second year of the Project and the results are used in the preparation of the fisheries management plan.

147. Delivery Indicators

- Report on the stock definition of small pelagics in the SCS LME has been completed
- Reports on biology and ecology (e.g., spawning season, spawning grounds) of the populations of target species and community of pelagic fishes have been produced by experts
- The results have been used in the decision for the appropriate fisheries management tool (among the GCM suite)
- The GCM tool/s have been incorporated in the fisheries management plan in the local ICM plans and reflected in appropriate Project documents

⁹⁰ The Marine Fishery Resources Development and Management Department (MRFDMD) of SEAFDEC, based in Terengganu, Malaysia, is conducting a study on migration of small pelagic fishes in the South China Sea by tag-recapture technique. The project will look into the application of the results in this project.

⁹¹ Please see stakeholders in each Country (Section xxxx).

Output 4.5 – Per capita income at demonstration sites increased by 10 percent

148. This output is closely associated with the outcome of increased fish stocks in the demonstration sites. It follows that once fish stocks have recovered through the implementation of the ICM plans, higher catch per unit of effort will result and consequent increase in income. This would be true only if limits on further entry of fishermen have been successfully put in place to prevent dissipation of the gains from fisheries management and other factors do not affect negatively the growth of the stock, e.g., habitat destruction, pollution of coastal waters, climate change. Restriction of entry of fishermen to the fishing ground is one area that presents enormous challenges to the Project in light of the social and political pressures with fisheries to increase harvests⁹² and as the employer of last resort in most coastal communities in the region. This will involve considerable assessment of the tradeoffs between social and economic objectives vis-à-vis environmental objectives. Often, political will determines the actions to be taken.

149. As part of the project monitoring activities, regular surveys or monitoring of selected fishermen will be undertaken to document the changes in income from fishing and non-fishing activities and fishing inputs. The methodology for the monitoring and/or survey will be finalized during the inception phase of the Project.

150. Delivery indicators

- Baseline information showing household incomes covering fishing and non-fishing sources is established.
- Monitoring/survey methodology is finalized and implemented.
- Periodic (at least annual) reports are completed and disseminated.

Outcome 5 – Facilitated uptake of knowledge and lessons learned

151. Knowledge, lessons, and best practices will be recorded at all levels: i.e., at Demonstration Site; at Country level, and at regional levels. The Regional Project Manager will facilitate the transfer and dissemination to local, regional, and international channels and audiences, including through the IWLEARN.net. A project website will be one of the major outputs from this Project.

152. At the site level, the application of Growth, Control, and Maintenance mechanisms in fisheries management may be first attempted at the level of the SCS LME. Many lessons will be learned in the implementation of each component of the Project and knowledge on the stocks of small pelagic fishes. The lessons and knowledge will be useful in replicating this integrated approach in fisheries management at the Replication Site in each Country. These will also be useful within the SCS LME for other coastal fisheries or other Priority Conservation Areas. The lessons in the SCS-SFM Project will also be useful in the Coral Triangle.

Output 5.1 – Captured, applied and disseminated knowledge, lessons and best practices within the SCS and other LMEs

⁹² Maunder et al., 2006

153. Monitoring and evaluation (M and E) of local, national, and regional activities will be conducted for Project Management. The M and E reports to be prepared at appropriate intervals (quarterly or semi-annually) are one source of information for lessons learned in this integrated approach to fisheries management at regional level.

154. Information, Education, and Communication materials will be prepared under each Component. These materials will use different media that is suitable to the target audience in each country. Relevant publications will be translated to the local dialect. Some of the expected publications from the Project are:

- Transboundary Diagnostic Analysis and the Strategic Action Program for Fisheries of the Sulu-Celebes Sea Large Marine Ecoregion
- Fisheries of the Sulu-Celebes Large Marine Ecosystem
- Integrated Coastal Management Plans
- Aspects of Biology and Ecology of Target Species in the Small Pelagics Fisheries in the SSME
- Brochures, flyers, briefs about the entire Project, major accomplishments, best practices, lessons learned and policy implications

155. Delivery indicators

- Publications are completed on time with the expected quality
- Project website is up and running with periodic uploading of relevant information with potentially a forum for discussion among stakeholders incorporated in the website
- Project progress is regularly uploaded in IWLEARN.net.
- Project brochure, policy briefs and other publications are printed out and translated to local dialects where applicable.
- The above outputs are widely disseminated particularly to the target audiences.

Project Indicators, Risks and Assumptions

Indicators

156. The Project indicators are specified for each outcome and output in the Project Logical Framework (Section II, Part II). In addition, the delivery indicators by outcome and output are described in the preceding sections. The indicators are in line with the indicators specified in IW Strategic Program 1: Restoring and Sustaining Coastal and Marine Fish Stocks and Associated Biological Diversity. This is further discussed in the section on Global Environmental Benefits.

157. The indicators capture both impacts and processes that would contribute to the achievement of the impacts. The ultimate impact of the project is the improvement of the stocks of small pelagic fisheries as measured by the increase in CPUE, income, and the conservation of mangrove forests, estuaries, seagrass beds, and coastal waters that are important habitats to marine fisheries, including small pelagic and large pelagic fisheries and demersal fisheries. In view of the relatively high cost of fish stock assessments using direct methods⁹³, the Project proposes to measure this indicator using catch per unit effort (CPUE). This measure is accepted by fisheries managers and policy makers as an appropriate indicator of stock abundance using

⁹³ The countries may have capabilities to estimate stock size using remote-sensing technique and molecular techniques. The applications of this remote-sensing technique may be explored by the countries if they decide towards joint exploitation of shared fish stocks.

statistical inference. CPUE is primarily a biophysical measure and a separate measure of the socioeconomic impacts of the Project will be used. Incomes from fishing would indicate the profitability of the economic activity which is expected to be directly proportional with stock abundance, assuming other things (e.g. fishing costs) constant. Of relevance to the Project are fishing and non-fishing incomes considering that finding alternative livelihoods for fishermen is part of the ICM plans. The interpretation of the CPUE indicator of fisheries improvement will be done with consideration of all other factors that can influence change of CPUE from the baseline. This includes the multidisciplinary data and information collected of the stocks of small pelagic fishes and evaluation of management strategy in the Project.

158. The Logical Framework also lists process indicators that would show progress towards achievement of project impacts as well as improvements in process and stress reduction from Project activities and deliverables. The process indicators are applicable to interim outputs of the Project such as those related to policy formulation and reform, capacity building and collaborative agreements.

159. The Logical Framework shows indicative baseline for each indicator. These will be validated during the inception phase of the Project. The indicators will likewise be reviewed during consultations with stakeholders. The validation process for the indicators and the baseline will be undertaken in the context of reviewing the monitoring and evaluation design that will assess progress towards the achievement of Project targets.

Risks and Assumptions

160. The risks faced by the Project are summarized in Table 3, which is reproduced from the Project Logical Framework. For the policy components of the Project, institutional risks could be the major concerns at the regional, national and local levels. The formulation and the subsequent implementation of the SAP would depend on stakeholder support at the national and local levels. The stakeholders include regional and national government institutions, non-government organizations and the private sector. The private sector is a critical partner particularly in the implementation of measures that would address the overexploitation of fishery resources. The institutional risks at the local level mirror those at the national and regional levels, although at a much smaller geopolitical scale. Climate change risks are relevant to the Project. The uncertainties about the negative impacts of climate change would affect the long-term impacts of the Project.

161. The risk mitigation measures may be grouped according to the type of risk. To address the institutional risks, an inclusive approach will be employed by drawing all the stakeholders into the Project activities, particularly in the formulation and implementation of the SAP and local regulations. The consultation mechanisms and the project implementation arrangements at the local, national and regional levels will strengthen institutional capacity to carry out project activities and achieve the objectives. Climate change risks will be addressed by increasing the resiliency of coastal and marine ecosystems. The Project will benefit from adaptation measures that will be demonstrated in other CTI subprojects.

Table 3. Risks and Assumptions by Outcome and Output

Outcome/Output	Risks and Assumptions
Outcome 1: Regional consensus on transboundary priorities, their immediate and root	Assumptions – national consultations will be implemented in a coordinated and timely manner, leading to the regional consultations; funds will be disbursed to national implementers efficiently; data and information from (Output 4.2 - ICM) are available for the analysis

Outcome/Output	Risks and Assumptions
causes	Risks – National consultations may be delayed by local events, e.g., elections, unavailability of stakeholders
Output 1.1: Consensus on the TDA for SCS LME	As above
Outcome 2: Agreement on regional and national legal , policy and institutional reforms for improved fisheries management	Assumptions – Continuing cooperation within the entire SSME governance structure at the regional, national and local levels Risks – Among others, these would include the non-cooperation and change of priorities of the national governments, lack of budgets, resources and overall capacity to implement the needed reforms, and deterioration of security relationships between countries that could hamper regional cooperation.
Output 2.1: Regional Strategic Action Program	Assumptions – Interest and cooperation of local, national and regional stakeholders are assumed; availability of scientific knowledge and expertise Risks – Major disagreements between stakeholders on the mission, vision, programs, projects and activities in the SAP and national action plan are potential risks.
Output 2.2: Collaborative agreements with relevant regional and subregional organizations	Assumptions – Interest of relevant regional and sub-regional organizations in SSME management and the project is assumed. Full capacity of both parties to implement signed agreements is assumed. Risks – Conflict of interests and mandates between the regional and sub-regional organizations and the SMME program, limited capacity for implementation, and rivalry and conflicts between organizations and their managers.
Outcome 3 – Strengthening of existing institutions and introduction of reforms to catalyze implementation of policies on reducing over-fishing and improving fisheries management in the SCS that will benefit the SCS coastal communities; strengthened national fisheries laws and policies	Assumptions - Active involvement of the management and staff of regional and national institutions involved in SSME management is assumed. Capacity of regional and national institutions to implement reforms is assumed. Risks – The risks include the bureaucratic red tape in national governments that make it difficult to institute reforms, indifference or resistance of government personnel in institutional reforms, and the change of leadership and short term-tenures at the national and ministerial/department levels that can change national priorities.
Output 3.1: Strengthened SSME Tri-Com for the SCS and its Sub-Com on Sustainable Fisheries	The assumptions and threats are closely similar to those of Outcome 3. An added risk is the current financial crisis which could make the search for sustainable financing difficult at least in the short-term.
Output 3.2: Strengthening of existing national inter-ministerial committees for the effective	The assumptions and threats are closely similar to those of Outcome 3 and Output 3.1. An added risk is the low priority that lawmakers may place on the revision and amendment of fishery plans. Another risk is the implementation record of SSME countries with limited capacities.

Outcome/Output	Risks and Assumptions
implementation of the agreed action plans for SCS	
Outcome 4 – Increased fish stocks at demonstration sites (5-10 percent increase)	<p>Assumptions – The small pelagic fisheries stocks are shared and transboundary stocks; Stock definition study is successfully conducted (Output 1.3); Fisheries Management Plans in Demonstration Sites across the SCS are implemented in timely and coordinated manner</p> <p>Risks – IUU fishing is not regulated successfully; the impacts of global climate change have been occurring during the life of the Project.</p>
Output 4.1 – Establishment of one demonstration site and another replication site for each country	<p>Assumptions – Integrated Coastal Management Plan is prepared and approved by appropriate body; Fisheries Management Plans are prepared and accepted by stakeholders for implementation</p> <p>Risks – Changes in District Officer or Mayors in Local Government Units; local government leaders, with jurisdiction on fishing grounds and coastal habitats, do not cooperate; Secondary or tertiary stakeholder block establishment of Demonstration Site; frequent and more severe storms due to Climate Change</p>
Output 4.2 – Integrated Coastal Management (ICM) plans for fisheries management, prepared and implemented at demonstration sites and initiated at each replication sites	<p>Assumptions – GIS technical support is available; local government unit is supportive; governmental agencies cooperate; stakeholders cooperate and participate in consultations</p> <p>Risks – Change in leadership in local government unit; a secondary or tertiary stakeholder blocks enactment of ICRM Plans; Intense and frequent storms destroy habitats of small pelagic fishes; frequent and more severe storms due to Climate Change</p>
Output 4.3 – Establishment of new or strengthening of existing local inter-sectoral committees for effective implementation of local ICM plans	<p>Assumptions – Local government units will work closely with the fisheries managers of each country; the ICM Plan will be adopted by the government</p> <p>Risks – The concept of integration of fisheries management in local planning is not understood or accepted by local government units; frequent and more severe storms due to Climate Change</p>
Output 4.4 – Better understanding of stocks of small pelagic fisheries in the SCS, , to include the following: a) estimate of populations levels of target species groups; and b) biology and ecology of target groups of small pelagic fishes	<p>Assumptions – The human resources are available for the studies; Funds for supporting research studies are available; Fishing industry accommodate and assist research activities; Research collaboration with SEAFDEC and 3 countries is agreed upon and implemented</p> <p>Risks – Costs of chemicals increase beyond the budget; molecular analyses are delayed due to cofinancing constraints; frequent and more severe storms due to Climate Change</p>
Output 4.5 – Per capita income at demonstration sites	<p>Assumptions – Fishing households cooperate in providing information on income; Non-fishing households cooperate in providing information on income;</p>

Outcome/Output	Risks and Assumptions
increased by 10 percent	Municipal/District Fisheries Statistics are gathered regularly Risks - Increased international demand for small pelagic fishes; increased IUU; unregulated entry; frequent and more severe storms due to Climate Change
Outcome 5 – Facilitated uptake of knowledge and lessons learned Output 5.1 – Captured, applied and disseminated knowledge, lessons and best practices within the SCS and other LMEs	Assumptions – Outputs from the Project are of the expected quality that would merit publication and dissemination. Risks – None

Expected Global, National and Local Benefits

162. The Project is consistent with the first objective of the IW focal area to foster international, multi-state cooperation on priority transboundary water concerns through more comprehensive ecosystem-based approaches to management and Strategic Program 1 on restoring and Sustaining Coastal and Marine Fish Stocks and Associated Biological Diversity, which targets Southeast Asian Seas as one of the global hotspots. The Project will build foundational capacity and pilot some innovative demonstration on fisheries conservation and management in the SCS for replication and on-the-ground implementation in a subsequent phase and/or under the wider Asia Coral Triangle Initiative Program.

163. Through institutional strengthening, policy reforms at the global/regional, national and local levels and implementation of concrete actions focused on demonstration sites, the Project is expected to bring about regional, national and local benefits. At the regional level, the three countries stand to benefit through the conservation of shared fish stocks. Overfishing is not only a regional problem but also a global problem.

164. The regional actions of IMP will contribute to international initiatives specifically the following:

- a) Code of Conduct for Responsible Fisheries in line with the requirements of the FAO Conference;
- b) WSSD targets which include the application of the ecosystem approach by 2010, maintenance or restoration of stocks to levels that can produce the maximum sustainable yield with the aim of achieving these goals for depleted stocks on an urgent basis and where possible not later than 2015; and
- c) Joint Plan of Implementation of WSSD through the negotiation and adoption of a number of management practices and codes including a Code of Conduct for Responsible Management and Harvesting of Living Marine Resources, adoption of guidelines for standard MCS procedures, negotiation and adoption of formal partnership agreements and linkages with donors and international financial institutions, bilateral agencies and

relevant industry and commercial stakeholders in order to assist in meeting the targets and in adopting a fully sustainable ecosystem approach to fisheries in the SCS as a whole.

165. The conservation of these economically important fish species will redound to the benefit of each country and local communities through the supply of some of the cheapest sources of fish protein, provision of sustainable livelihoods among the marginalized sectors and supporting the web of life in the coastal and marine ecosystems. At the national level, the Project will also contribute to national targets as specified in the Millennium Development Goals (MDGs), in particular Goal 7: Ensuring Environmental Sustainability, Goal : Eradication of Poverty and Hunger, Goal 8: Developing a Global Partnership for Development. The Project will also facilitate the countries' ability to meet their commitments in the UNCBD and MARPOL.

166. In addition to meeting national commitments to global multilateral environmental agreements, the Project will also enable the participating countries enhance their contribution to regional initiatives, beyond the SSME Tri-Com. The three countries are among the 10 countries that have been participating actively in the East Asian Seas in the Regional Seas Program of UNEP. The participating countries have formulated action plans to address the threats to the region that include erosion and siltation from land development, logging and mining, blast fishing in coral reefs, conversion of mangroves, overfishing, unimpeded coastal development and disposal of untreated wastes. More recently, the Coordinating Body of the Seas of East Asia (COBSEA) has now adopted a New Strategic Direction for the period 2008-2012. The countries will address the common issues through four inter-linked strategies: information management: national capacity building; strategic and emerging issues; and regional cooperation. The strategies are in line with the directions of this Project.

167. At the local level, the Project will, as mentioned earlier, contribute to sustainable livelihoods and provision of some of the cheaper sources of fish protein. The inclusive approach employed in the demonstration sites will empower communities in directly planning for and management of their coastal resources. The lessons learned in the process will guide the up-scaling efforts at the national and regional arenas.

Country Ownership: Country Eligibility and Country Drivenness

Country Eligibility

168. The three SCS countries of Indonesia, Malaysia and the Philippines are eligible to receive GEF grants in accordance with the GEF Instrument (para 9b). The countries host UNDP offices and receive UNDP technical assistance.

Country Drivenness (Indonesia, Malaysia, Philippines)

169. At the sub-regional level, Indonesia, Malaysia and the Philippines (IMP) are already cooperating to pursue biodiversity conservation and sustainable development of the SCS. It started from the formulation of a tri-national vision in 2001 and in developing a multi-stakeholder Ecoregion Conservation Plan (ECP), which was adopted through a ministerial signing of a tri-national Memorandum of Understanding (MOU) during a side event held at the Seventh Conference of Parties to the Convention on Biological Diversity (CBD-COP7) in Kuala Lumpur, Malaysia in 2004. The ECP embodies four action plans, one each for the countries sharing the SCS LME and an ecoregion-level action plan that should be pursued jointly by the countries. The action plans are hinged on a tri-national vision and a common set of 10 objectives,

one of which is a fisheries objective. The ECP incorporates the Framework for a Fishery Management Program (FMP) for SCS in the fisheries objective of the Ecoregion-level Action Plan. By adopting the ECP, the countries effectively adopted the FMP framework. Additionally, the ECP is aligned with the national priorities, plans and programs of the three countries as well as with the common international commitments, such as the SDS-SEA, CBD and the WSSD. At the first meeting of the SSME Tri-Com held in Balikpapan, East Indonesia on 1 March 2006, the committee decided to focus on the following three major concerns of the SCS under the leadership of concerned countries: sustainable fisheries and livelihood (Malaysia); conservation of endangered, charismatic and migratory species (Indonesia); and establishment of network of marine protected areas (Philippines). The subcommittees have since organized their terms of reference and action plans. The Project will contribute to the implementation of relevant fisheries components of the work plans of the sub-committees.

170. The Project is aligned with the CTI RPOA as discussed in earlier section on *Institutional, Sectoral and Policy Context* and in the section on *Sustainability* below. This Project is one of the sub-projects of the CTI program.

National Commitments

171. The succeeding sections mention the major national activities and policies that indicate commitments of the governments of the three SCS countries to the conservation and sustainable management of fisheries resources in the SCS.

Indonesia

172. Indonesia's economy grew from a per capita GDP of only \$70 originally to more than \$1,000 by 1996. This was achieved through prudent macroeconomic monetary and fiscal policies. Annual real GDP grew yearly on average at about 7 percent from 1987 to 1997. This brought country recognition as a newly industrialized economy and emerging market. In 2004 and 2005 economic growth reached 5.1 percent and 5.6 percent respectively. The East-Asian financial crisis in the late 1990s and the current global financial crisis, however, had dampened the Indonesian economy like those of the rest of the world and have constrained resources for public management including those for fisheries. On the other hand, the commitment of Indonesia to the sustainable development of its fisheries resources cannot be overemphasized and remains in place. The current core national fisheries law No. 31/2004 and its amendment No. 45/2009, mention the sustainability of marine resources as its first key objective. In addition, law No.27/2007 on Coastal and Small Islands Management addresses fisheries and management issues in the coastal areas that will provide general consistent guidance to district governments in the management of their coastal waters⁹⁴.

173. Aside from the aforementioned laws, there are legislations related to other national agencies of Indonesia that directly or indirectly impact fisheries policies, laws and management practices. These agencies include the Ministry of Environment which takes care, among others, of marine environment issues including fisheries resource conservation and sustainable development. Other agencies involved are the Ministry of Home Affairs for the devolution of management authority to provinces and districts, Ministry of Marine Affairs and Fisheries that has taken authority for the management of marine conservation, and the navy and "Polair" for their maritime enforcement functions.

⁹⁴Flewelling, P. and G. Hosch. 2004a. Country Review : Indonesia. Review of the State of World Marine Capture Fisheries Management : Pacific Ocean. *FAO Fisheries Technical Paper No. 488/1*. Retrieved March 11, 2009 from <http://www.fao.org/docrep/009/a0477e/a0477e0b.htm>

Malaysia

174. Malaysia has experienced great strides in its economy and underwent rapid economic progress in the 20th century up to the present. For instance, its current GDP per capita of \$14,400 is many times larger than those of Indonesia and the Philippines. This success of the country is to a large degree caused by the shift of economic focus from a reliance on agriculture and mining to manufacturing. With the assistance of Japan, heavy industries flourished in Malaysia and in a matter of years, exports became a major engine of growth. Because of prudent monetary policies, Malaysia was less affected by the East Asian Financial crisis of the late 1990s. The present global financial crisis, however, is another story as the country experienced recession like the rest of the world. This recession could reduce the resources and capacity of the national government to manage the different economic sectors including fisheries. Malaysia, however, is firmly committed to the conservation and sustainable management of its fisheries and marine resources as reflected by its relevant national policies and laws. Particularly, the Department of Fisheries has policies and strategies that include to: manage, conserve and rehabilitate fisheries resources to ensure their sustainability, develop and manage marine parks and recreational fisheries, and monitor pollution affecting fisheries and marine resources⁹⁵. The national policies and strategies also include those which are focused on direct limitation of fishing effort, establishment of strict MCS scheme, rehabilitation of resources, conservation of endangered marine species and biodiversity and other related approaches.

175. In addition to the core laws for the management of fisheries, there are legislations in Malaysia that directly or indirectly affect the conservation and sustainable management of the fisheries sector. These include the Land Conservation Act 1960, National Land Code 1965, Town and Country Planning Act 1974, Street Drainage, Buildings Act 1974, Environmental Quality Act 1974, Local Government Act 1976, Uniform Building By-laws 1986, Environmental Quality (Prescribed Activities) Order 1987, and Environmental Quality (Prescribed Premises) Order. Thus, it can also be said that like the other SCS countries, the commitment of Malaysia to the conservation and sustainable management of its fisheries resources is firm by way of the various legislations already enacted. Probably what is lacking at present in the legislations is an enabling law that would devolve the management of local resources to the local governments as what already exists in Indonesia and the Philippines. On the other hand, Malaysia has prioritized the protection of the interests of traditional fishers and the improvement of their status in the existing national legislations which is a clear indication of the great importance afforded by the national government to the conditions of local fishing areas and welfare of local communities including those in Fisheries.

Philippines

176. After World War the performance of the Philippine economy has been erratic. Initially, it was growing rapidly and by the 1960s was second only to Japan with the potential of becoming one of the richest countries in Southeast Asia. Unfortunately, however, during the regime of President Marcos, the economy declined dramatically brought about largely by pervasive corruption as billions of dollars were embezzled from the national treasury. By the time of the People Power Revolution in 1986, the country had declined falling behind most of its Southeast Asian neighbors. In 1998, the country suffered much from the East Asian Financial Crisis as the exchange rose by as much as P56 to a dollar. The Philippines recovered from the crisis with the

⁹⁵ Flewelling, P. and G. Hosch. 2004b. Country Review : Malaysia. Review of the State of World Marine Capture Fisheries Management : Pacific Ocean. *FAO Fisheries Technical Paper No. 488/1*. Retrieved March 11, 2009 from <http://www.fao.org/docrep/009/a0477e/a0477e0c.htm>

implementation of sound macroeconomic policies and was well on its way to rapid development in the 2000s. In 2004, the economy grew by 6.1 percent while In 2005, the peso posted an appreciation rate of 6 percent which was the highest in the Asian region. The sudden occurrence of the current global financial crisis again dampened the Philippine economy like those of other countries and left doubts as to its ability to sustainably manage its economy, including the fisheries sector.

177. Notwithstanding the global financial crisis, the policies, laws and institutions at the national and local levels exist that showcase the commitment of the Philippines to fisheries conservation and sustainable development. The Philippine Fisheries Code, Implementing Rules and Regulations (IRR) of the Philippine Fisheries Code, and Fisheries Administrative Ordinances are full of provisions that promote conservation and sustainable development in fisheries⁹⁶. At the local level, the Local Government Code led to the devolution of some powers from national agencies to the local governments and communities which has subsequently promoted better management of local fisheries resources. For its part, the Philippine Fisheries Code effected the creation of Fisheries and Aquatic Resources Management Councils (FARMCs) at the national, provincial and local levels which allows the participatory involvement of various stakeholders in fisheries management. The Code has also resulted to the creation of the National Fisheries Research and Development Institute (NFRDI) which involves itself not only in the development of fisheries resources for economic uses but for also for conservation and sustainable development.

178. Aside from the BFAR and NFRDI, there are other national government agencies and programs in the Philippines that can significantly affect and contribute to the effort of conservation and sustainable development of fisheries resources, including those in the SCS. These include the coastal environment programme of the DENR, PCAMRD of the DOST, Comprehensive Agrarian Reform Program (CARP) of the Department of Agrarian Reform (DAR) which also covers fisheries and other fisheries-related agencies and programs. With these policies, laws and institutions, the commitment of the Philippines to the conservation and sustainable management of fisheries resources, including those in the SCS, is firmly established.

Sustainability

179. The Project has high potential for sustainability in the Sulu-Celebes Large Marine Ecosystem from three (3) existing intergovernmental agreements and declaration. These international agreements and declaration are for marine biodiversity conservation and sustainable uses.

180. *Sulu-Sulawesi Marine Ecoregion Conservation Plan* - Indonesia, Malaysia, and the Philippines have ratified the Sulu-Sulawesi Marine Ecoregion Conservation Plan which serves as the framework of regional cooperation on Sustainable Fisheries. The Strategic Action Plan that will be prepared in this Project will be implemented through this existing governmental framework for marine resources management.

181. *Brunei-Indonesia-Malaysia-Philippines East Asia Growth Area (BIMP-EAGA)* – The BIMP-EAGA is an economic grouping that has a mandate for the sustainable use of marine

⁹⁶Flewelling, P. and G. Hosch. 2004c. Country Review : Philippines. Review of the State of World Marine Capture Fisheries Management : Pacific Ocean. *FAO Fisheries Technical Paper No. 488/1*. Retrieved March 11, 2009 from www.apfic.org/modules/xfsection/download.php?fileid=164

fishery resources. The Natural Resources Cluster of the BIMP-EAGA has accepted the SSME and the Plan of Action for Sustainable Fisheries. The Strategic Action Plan will be abided by the intergovernmental grouping for the promotion of sustainable fisheries in the sub-region of the SSME. The private sector can work closely with the government within the framework of the SAP.

182. *Coral Triangle Initiative (CTI)* – Indonesia, Malaysia, and the Philippines have declared regional cooperation for biodiversity conservation and sustainable use of marine resources within the Coral Triangle. Two of the goals of the Regional Plan of Action for the CTI are on the Conservation of the Sulu-Sulawesi Seascape (Goal 1) and Goal 2 is on Sustainable Fisheries. National Plans of Action for Indonesia and the Philippines have now been prepared while the National Plan of Action for Malaysia is being discussed. All the National Plans of Actions are geared towards achieving the Goals in the Regional Plan of Action.

183. Thus, this Project is the implementation of the agreed and declared goals of the 3 countries. The supportive enabling condition supports the implementation of the SAP and the joint management of fish stocks. In view of this legal agreements and economic framework, the sustainability of the Project is expected to extend beyond the duration of the Project.

Replicability

184. The replicability of the Sulu-Celebes Sea Project is very possible at national, at Large Marine Ecosystem, and at multi-ecoregional level. The lessons learned in the application of best management practices (G, C, M) can be used in the management of other fisheries, such as coral reef fisheries, trawl fisheries, and large pelagic fisheries within national marine waters and in the fisheries on transboundary stocks of demersal (coral reef fishes, bay fishes and invertebrates) and large pelagic fishes. The lessons learned in the application of integrated approach in fisheries management will be useful in small pelagic fisheries of the South China Sea Large Marine Ecosystem, the Indonesian Sea LME and other tropical LMEs with corals and rich marine life.

Lessons learned and Cost Effectiveness

185. Lessons from UNDP/GEF's portfolio of IW projects under implementation include:

- Project design can only be effective if the following key ingredients are present: 1) a clear shared vision, 2) inclusive, multi-level partnerships, 3) active stakeholder participation sustained through appropriate incentive mechanisms, 4) adequate funding streams marked with resource counter parting, 5) science-based management support, 6) purposive capacity building and organizational strengthening, and 7) active communication and advocacy. The role of partnership building must be given importance at all times and fostered at all levels. Participation, not mere consultations, needs to be ensured and sustained through both financial and non-monetary incentives such as mechanisms to foster team building, community spirit and concern for the common good. In addition, partnership development should be supported by resource mobilization from all partners that are both willing and able to contribute to the advancement of the project's development and immediate objectives.
- Political commitment to the project at the highest level (Ministerial and Presidential) is very critical for sustainability. At least at the Ministerial level Project Officers (National

Directors and Programme Assistants) should interact continuously with political leaders. The Inter-Ministerial Steering Committees should be encouraged to meet regularly and give feedbacks to their respective Ministers.

186. The Project builds on these and other lessons, which will ensure its cost-effectiveness. The political support to the CTI at the highest level, manifested by the recent CTI Summit in Manado, provides a strong platform for the SCS LME Project.

PART III: Management Arrangements

Implementation

187. UNDP will be the Implementing Agency (IA). Each of the three countries has an active UNDP CO which will provide in-kind support to project development and implementation. UNDP has supported coastal and marine projects in the SCS region through a number of national and regional projects.

Execution

190. The UN Office for Project Services (UNOPS) through its Global and Inter-Regional Division will execute the SCS SPM Project, in accordance with standard operational, financial guidelines and procedures. UNOPS will be accountable to UNDP for the delivery of agreed outputs as per agreed project work plans, and for financial management and reporting as well as ensuring cost-effectiveness.

Project Coordination and Administration

193. One of the objectives of the Project is to strengthen the SSME Tri-Com, Sub-Com on Sustainable Fisheries and the different institutions at the national and local levels involved in the management of the SCS. As a general principle, the Project will not create new institutions at least at the start of project implementation but ensure that the existing ones are enhanced and capacitated to properly perform their functions. The organogram of the Project is presented in Figure 2 below. The Project will have a Project Steering Committee (PSC) to provide overall guidance and advise related to the regional, national, local and overall activities of the Project. The PSC will be initially composed of one representative each from the SSME Sub-Com on Sustainable Fisheries, representing the three countries and additional members from the UNDP, UNOPS and CI. During the first meeting of the PSC, the PSC will elect its Chair and finalize its terms of reference. The PSC will report to the SSME Sub-Committee on Sustainable Fisheries. In the future, the PSC may decide to revise its composition by inviting additional members. In the conduct of its functions, the PSC will interact and receive inputs from the CTI which covers the SSME as a sub-region, GEF which mainly funds the Project, UNOPS which is the executing agency and UNDP/PPR which is the implementing agency.

195. Under the PSC is the regional Project Management Unit (PMU) which is the overall implementing unit of the Project on the ground. The PMU will be headed by the RPM who will be hired on a full-time basis, following UNOPS guidelines, to perform the overall management duties for the Project. The RPM will be in-charge of the supervision of project activities and deliverables, hiring and contracting of regional staff and regional and national consultants,

project procurement and disbursement, budget management, reporting, evaluation and monitoring. He/she will also be responsible for the supervision of the regional and national consultants of the Project, including the legal and institutional experts, socio-economists, and fisheries biologists, who will hold formal office at the PMU and National Project Units (NPU) respectively during the terms of their project engagement. Furthermore, the RPM will ensure that the activities of the regional and national consultants are conducted and deliverables are submitted on a timely basis. The RPM will be assisted by a Regional Technical Staff (RTS) to be recruited on a full-time basis to provide technical backup to the RPM and the Project and perform other assigned duties. A Regional Administrative and Financial Officer (RAFO) will also be hired on a full-time basis also to provide secretarial support and other assigned duties. Among its functions, the PMU will interact and provide guidance to CI and other regional, national and local NGOs, academicians and other collaborating agencies and stakeholders on the progress and overall implementation of the Project.

196. At the national level, the Project will establish a National Project Unit (NPU) in each of the SCS countries to coordinate the activities between the demonstration sites and the PMU on one hand and the national executing agencies on the other. The NPU will be headed by a National Coordinator (NC) who will be a part-time seconded staff from the executing agency of the particular country. The NC will be assisted by the National Project Assistant (NPA) who is also a part-time seconded staff. At the demonstration site level, the Project will establish a Demonstration Site Unit (DSU) in each of the SCS countries. Hosting arrangements for the DSU will reflect the conditions in each country. The options will include hosting by the local government unit or by the national/state government. In the case of the Philippines, the Bureau of Fisheries and Aquatic Resources will oversee the implementation of the project. Similarly in the case of Malaysia, the Department of Fisheries, Sabah, will undertake the same role. The DSU will be headed by a Site Coordinator (SC) who will be hired on a full-time basis to perform the overall management duties in the demonstration site. Specifically, the SC will be in-charge of the supervision of activities and deliverables, hiring and contracting of local staff and local consultants, procurement and disbursement, budget management, reporting, evaluation and monitoring related to the demonstration site. The SC will also be responsible for the supervision of the demonstration site consultants of the Project, including the ICRM expert, fisheries specialist, IEC expert, and institutional social expert who will hold formal office at the DSU during the terms of their project engagement. He/she will further ensure that their activities are conducted and deliverables are submitted on a timely basis. The SC will be assisted by a monitoring and administrative staff to be recruited by the Project and the other staff to be seconded by the local governments, regional offices of national fisheries agencies and other local partners.

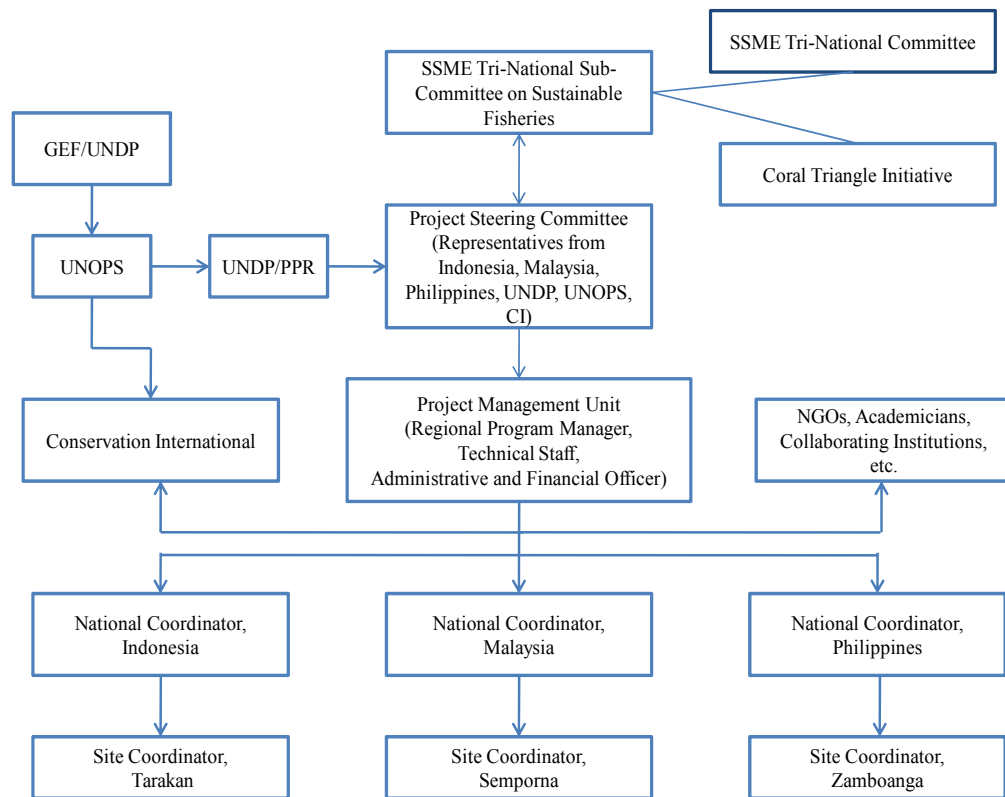


Figure 2. Organogram of the Sulu-Celebes Sea Sustainable Fisheries Development Project

197. The implementation of the SAP, national strategic action plans and ICM plans by the Project and its various partners and stakeholders at the regional, national and local demonstration site levels may require other temporary management staff and personnel in addition to the ones already aforementioned. These potential additional staff will be established by the Project as the need arises with funding to be generated from sources outside of the current project budget. These new sources may include counterpart funding and future commitments by various partners and stakeholders. The hiring of additional staff will be done based on objectives, resource constraints and other important project considerations.

198. Since the management of project activities at the regional, national and local levels require an adequate degree of cohesion and integration, the regional, national and demonstration site coordinators of the Project will regularly and continuously coordinate, communicate and disseminate data and information on project activities to the various stakeholders at all levels. To do this, the coordinators will present updates and developments of project activities within their domain through meetings and conferences and similar direct contact presentations and through electronic and other indirect means of communication. A schedule of periodic direct contact presentations will be developed at all levels and implemented by the project coordinators. Electronic methods and traditional mail communication methods will also be developed and implemented to enhance the integration and coherent conduct of project activities with other fisheries activities in the relevant regional, national and local areas during the entire duration of the Project.

199. Finally, since the lessons learned at the regional, national and local demonstration sites in each of the SCS countries will be disseminated to other areas for broader application of knowledge learned and mainstreaming of project activities, the management of the Project at all levels will establish knowledge management activities designed for outreach to non-project areas. Detailed discussion is in Outcome 5 and Output 5.1 in the project strategy. The project coordinators will devise and implement specific IEC activities utilizing appropriate forms of traditional and electronic media that will enhance the impact of the Project not only in its sites but in the broader SCS arena.

PART IV: Monitoring and Evaluation Plan and Budget

Project Inception Phase

200. During the first two months of the Project, the full project team together with the representatives of the Tri-Com, Sub-Com on Sustainable Fisheries, national technical working groups/presidential commission, co-financing partners, UNDP and other relevant regional, national and local stakeholders will conduct the Project Inception Meeting (PIM).

201. Among its important purposes, the PIM will allow the participants to fully understand the goals and objectives of the Project. It will also provide guidance to the project team on the preparation of the first Annual Work Plan (AWP) which is based on the project logframe. During the meeting, the logframe will be reviewed after which the AWP will be prepared. Another important purpose of the PIM is to provide an overview of the UNDP/GEF reporting and monitoring and evaluation (M&E) requirements emphasizing on the annual Project Implementation Reviews (PIRs) and related documentation, Tripartite Review (TPR) Meetings and mid-term and final evaluations. Still another purpose of the PIM is that it will allow all parties to understand and agree on their roles and functions in the Project. In particular, the relationship between the Project and the Tri-Com, Sub-Com on Sustainable Fisheries and the national technical working groups/presidential commission will be clarified.

Monitoring Responsibility and Events

202. The RPM will be responsible for the day-to-day monitoring and implementation progress of the Project based on the AWP. For this purpose, he and the project team will develop specific targets for the implementation performance indicators and their means of verification during the first year of the implementation of the Project. These targets and means of verification will be used to evaluate the pace of implementation and will form part of the AWP. As an annual activity for the succeeding years, targets and indicators for project implementation will likewise be defined as part of the internal evaluation and planning processes conducted by the project team and agreed with the executing and implementing agencies.

203. The UNDP will conduct a project monitoring of the progress of implementation based on quarterly or semi-annual reports from the PMU of the Project. Whenever appropriate, the project team, UNDP and other relevant stakeholders will conduct specific meetings to take stock and address any problems that may arise related to the implementation of the Project. The PMU will prepare reports of such meetings and circulate these no later than two weeks after the meetings were held.

204. The annual monitoring of the Project will be done through the Tripartite Review (TPR) which will be conducted by the project steering committee once a year. The first TPR meeting will be held within the first year after the first project inception meeting. For this meeting, the RPC and project team will prepare an Annual Progress Report (APR) which includes the IW Template (see below) and submit it to UNDP at least 14 days before the actual TPR for review and comments. The RPC and project team will present the APR during the TPR highlighting the policy issues and recommendations to be

decided by the participants. If necessary, separate reviews of each project component will also be conducted to inform the TPR participants of the progress of project implementation.

Project Monitoring and Reporting

205. The RPC and project team will be responsible for the preparation and submission of the following reports that may form part of the monitoring process. The mandatory reports are (a) to (e) while (f) and (g) are project specific to be defined throughout the implementation of the Project. The Monitoring and Evaluation Plan with corresponding budget is provided in Table 4.

Inception Report (IR)

206. The RPM and project team will prepare the IR immediately following the Inception Meeting. This report covers a detailed First Year Work Plan divided in quarterly timeframes providing the activities and progress indicators that will be followed during the first year of project implementation. A detailed description of the institutional roles, responsibilities, coordinating actions and feedback mechanisms of project related matters are also included in the IR. Furthermore, the report will include a section on progress to date on project establishment and start-up activities and an update of any changed external and/or unforeseen conditions that may affect project implementation.

Quarterly Progress Report (QPR)

207. The RPC and project team will prepare a QPR which is a self-assessment report of the quarterly progress of the Project. The QPR is also a key input to the APR and TPR.

Annual Progress Report (APR)/Project Implementation Review (PIR)

208. The APR and PIR are the annual monitoring processes required by UNDP and GEF respectively. These will be overseen by UNDP and undertaken by the PMU. It has developed into an important monitoring tool for projects and serves as the main vehicle for extracting lessons from existing projects. The GEF Results Template and Tracking Tools for SP1 will also be attached to this report. It is prepared yearly following the first year of project implementation and before the holding of the TPR. Its purpose is to reflect progress achieved in meeting the AWP of the Project and assess the performance of the Project in contributing to project outcomes. The UNDP will evaluate the individual APRs/PIRs of the Project by focal area, theme and region for common issues/results and reasons. The reports will also be useful to the Independent Evaluators who can utilize them to identify any changes in project structure, indicators, work plans, etc. and view a past history of delivery and assessment.

Periodic Thematic Reports

209. As and when required by UNDP or other major stakeholders, the RPC and project team will prepare Periodic Thematic Reports that will focus on specific issues or areas of project activity. These reports may be useful as a form of lessons learned exercise, specific oversight in key areas, or as troubleshooting exercises to assess and overcome constraints and difficulties encountered.

Project Terminal Report

210. The RPC and project team will prepare the Project Terminal Report during the last three months of the Project. This report is comprehensive and summarizes all activities,

achievements and outputs, lessons learned, objectives met or unmet, structures and systems implemented and other features of the Project. It will be a definitive statement of the activities of the Project during its lifetime.

Terminal Tripartite Review (TTR)

211. The TTR is conducted during the last month of project implementation. Two months prior to the TTR, the RPC will prepare the draft terminal report (see below), which will serve as the basis of the deliberations and discussions during the TTR. The review will consider the implementation of the Project in totality giving specific consideration to whether or not it has attained its stated objectives and contributed to the broader environmental objective. It will also decide whether any further actions are still needed especially in relation to the sustainability of project results beyond the life of the Project. .

Technical Reports

212. Technical Reports are detailed documents covering specific areas of analysis or scientific specializations within the overall Project. These reports may be prepared by members of the project team or external consultants and should be comprehensive, specialized analyses of clearly defined areas of research within the framework of the Project. The technical reports can be used to disseminate information and knowledge generated during the implementation of the Project. .

Project Publications

213. Project publications may be scientific, technical or informational texts on the activities and achievements of the Project in the form of journal articles and other publications. The project team will determine if any of the technical reports generated by the Project merit formal publication. The indicative list of project publications is found in *Output 4.5*. Prior clearance from UNDP will be sought for all publications.

Independent Evaluation

214. The Project will be subjected to at least two independent external evaluations as follows:

Mid-term Evaluation (MTE)

215. An independent Mid-Term Evaluation will be undertaken at the end of the second year of implementation of the Project. The MTE will determine progress being made towards the achievement of outcomes and will identify course correction if needed. It will focus on the effectiveness, efficiency and timeliness of project implementation; highlight issues requiring decisions and actions; and will present initial lessons learned about project design, implementation and management.

Final Evaluation (FE)

216. An Independent Final Evaluation will be undertaken three months before the terminal report meeting and will focus on the same issues as the MTE. The final evaluation will also look at the impact and sustainability of results, including the contribution to capacity development and the achievement of global environmental goals. The Final Evaluation should also provide recommendations for follow-up activities.

Audit Clause

217. Certified periodic financial statements of the Project and with an annual audit of the financial statements relating to the status of UNDP (including GEF) funds according to established procedures set out in the programming and finance manuals will be prepared by the executing agency and provided to UNDP.

Learning and Knowledge Sharing

218. Results from the Project will be disseminated within and beyond the project intervention zone through a number of existing information sharing networks and related forums. For this purpose, the Project will identify, analyze, and share lessons learned that might be beneficial to other projects under implementation or in the design and implementation of similar future projects.

Table 4. Indicative Monitoring and Evaluation (M&E) Workplan and Corresponding Budget

Type of M&E Activity	Responsible Parties	Budget (US\$)*	Time Frame
Inception Meeting	<ul style="list-style-type: none">•Regional Project Manager•UNDP CO•UNDP/GEF	\$20,000	Within first two months of project start up
Inception Report	<ul style="list-style-type: none">•Project Team•UNDP CO	None	Immediately following inception meeting
Measurement & Verification for IW Indicators and Project Performance Indicators	<ul style="list-style-type: none">•Oversight by Project GEF Technical Advisor and Regional Project Manager•Measurement by regional field officers and local IAs	\$50,000	Start, mid and end of Project
PIR	<ul style="list-style-type: none">•Project Team•UNDP CO•UNDP/GEF	None	Annually
GEF IW Results template reporting and IW Tracking Tool reporting	<ul style="list-style-type: none">• PMU• Project Steering Committee Review• Implementing Agencies	None	Annually
TPR and TPR Report	<ul style="list-style-type: none">•Government Counterparts•UNDP CO•Project Team•UNDP/GEF Regional Coordinating Unit (RCU)	None	Every year, upon receipt of APR
Steering Committee Meetings	<ul style="list-style-type: none">•Regional Project Manager•UNDP CO	None	Following Inception and subsequently at least once a year

Type of M&E Activity	Responsible Parties	Budget (US\$)*	Time Frame
Periodic status reports	•Project Team	\$5,000 miscellaneous)	To be determined by project team and UNDP CO
Technical reports	•Project Team •Hired consultants as needed	\$5,000	To be determined by project team and UNDP CO
Mid-Term (External) Evaluation (MTE)	•Project Team •UNDP CO •UNDP/GEF RCU •External (i.e. evaluation team)	\$20,000	At the mid-point of project implementation
Final External Evaluation	•Project Team •UNDP CO •UNDP/GEF RCU External (i.e. evaluation team)	\$20,000	At the end of project implementation
Terminal Report	•Project Team •UNDP CO •External Consultant	None	At least one month before the end of the project
Lessons learned	•Project Team •Consultancies •UNDP/GEF RCU (suggested formats for documenting best practices, etc.)	\$50,000	Yearly
Audit	•UNDP CO •Project Team	\$5,000	
Visits to field sites (UNDP staff travel costs to be charged to IA fees)	•UNDP Country Offices •UNDP/GEF RCU (as appropriate) •Government representatives	\$10,000	Yearly (average one visit per year)
TOTAL INDICATIVE COST • <i>Excluding project team staff time and UNDP staff and travel expenses</i>		US\$185,000	

*Excluding project team staff time. These expenditures are embedded in the various component budgets, particularly in the travel and fees of local and international consultants, as well as the budget and time of counterpart staff from government.

PART V: Legal Context

219. This Project Document shall be the instrument referred to as such in Article I of the Standard Basic Assistance Agreement (SBAA) between the Governments of the Philippines and the United Nations Development Programme, signed by the Parties and shall be the instrument envisaged in the Supplemental Provision to the Project Document, attached hereto. The Supplemental Provisions to the Project Document is a standard annex to project documents that is used in countries which are not parties to the SBAA. The Supplemental Provisions outlines the specific basic conditions under which UNDP assists

the Government in carrying its development programs. It specifies, among others, the UNDP privileges and immunities, the forms of assistance, the management arrangements, the role of the Government and the executing agency, resources, costs and general provisions. The host country implementing agency shall, for the purpose of the SBAA and the Supplemental Provisions to the Project Document, refer to the Government cooperating agency described in the SBAA and the Supplemental Provisions.

On the part of the Government of Indonesia, this document together with all relevant agreements signed by the Government and UNDP which is incorporated by reference below constitute the Project Document.

- a) The Revised Basic Agreement for Technical Assistance signed 29 October 1954 between the United Nations, the International Labour Organization, the Food and Agriculture Organization of the United Nations, the United Nations Educational, Scientific and Cultural Organization, the International Civil Aviation Organization, and the World Health Organization and the Government of the Republic of Indonesia,
- b) The Standard Agreement on Operational Assistance signed 12 June 1969 between the United Nations, the International Labour Organization, the Food and Agriculture Organization of the United Nations, the United Nations Educational, Scientific and Cultural Organization, the International Civil Aviation Organization, the World Health Organization, the International Telecommunication Union, the World Meteorological Organization, the International Atomic Energy Agency, the Universal Postal Union, the Inter-Governmental Maritime Consultative Organization and the United Nations Industrial Development Organization and the Government of the Republic of Indonesia,
- c) The Agreement signed 7 October 1960 between the United Nations Special Fund and the Government of the Republic of Indonesia, and

Additionally, this document together with the CPAP signed by the Government of Indonesia and UNDP which is incorporated by reference constitute together the instrument envisaged in the Supplemental Provisions to the Project Document, attached hereto as Annex 2.

Consistent with the above Supplemental Provisions, the responsibility for the safety and security of the implementing partner and its personnel and property, and of UNDP's property in the implementing partner's custody, rests with the implementing partner.

The implementing partner shall:

- a) put in place an appropriate security Plan and maintain the security Plan, taking into account the security situation in the country where the project is being carried;
- b) assume all risks and liabilities related to the implementing partner's security, and the full implementation of the security Plan.

The Legal Context for UNDP and the Government of Malaysia shall be provided subsequently in a separate annex which shall be attached as an integral part of this Prodoc.

220. All activities stipulated in the Project Document shall be implemented accordingly. However, should there be a need to make changes/modifications to any of the agreed activities, all signatories of the Project Document must concur, before such changes are

made. The following types of revisions may be made to this project document with the signatures of UNDP principal project representative and the Government of Indonesia, the Government of Malaysia and the Government of the Philippines, provided that he/she has verified the agreement thereto by the UNDP-GEF Unit and is assured the other signatories to the Project Document have no objections to the proposed changes:

- a) Revision of, or addition to, any of the annexes to the Project Document;
- b) Revisions which do not involve significant changes in the immediate objectives, outputs or activities of the project, but are caused by the rearrangement of the inputs already agreed to or by cost increases due to inflation;
- c) Mandatory annual revisions which re-phase the delivery of agreed project inputs or increased experts or other costs due to inflation or take into account agency expenditure flexibility; and
- d) Inclusion of additional annexes and attachments only as set out here in this Project Document.

SECTION II: GEF INCREMENT AND STRATEGIC RESULTS FRAMEWORK

PART I: Incremental Cost and Project Financing

221. The incremental cost reasoning for the Project following GEF guidelines on this subject is described below.

Baseline

222. The SCS has an outstanding biodiversity being one of the most diverse marine ecosystems in the world. The region provides environmental services to the three bordering countries which in turn support many of the economic activities of the populations in these countries. Overall, these economic activities which are anchored on the diversity and ecological integrity of SCS have provided food, income, employment and livelihoods to the coastal populations of the three countries, public revenues to their governments and foreign exchange to their economies. While highly important environmentally and economically, the coastal and marine resources in the SCS are at significant risk at present. In the case of the fisheries sector, the general situation has been of overfishing, destructive fishing and overall unsustainable exploitation of coastal fisheries resources in the SCS. The extent of these threats and their impacts on fisheries resources have been supported by scientific studies and recognized by the governments in the three countries. Already, awareness about the situation and efforts to address the threats are growing. Currently, the national governments of the SCS countries have either acted to protect their marine environment on their own and/or in collaboration with each other and regional/international partners.

223. National governance institutions are in place for fisheries management in the three SCS countries. In the case of Indonesia and the Philippines, much of fisheries management have been devolved also to local government units while in Malaysia, the same has remain centralized. Investment in fisheries have been increasing as well as reflected by the numerous fisheries related projects conducted at the national and local levels for promote a more sustainable exploitation of fisheries and aquatic resources. At the sub-regional level, the three SCS countries have started to work together to address the threats to the shared marine resources of SCS in recent years. In particular, the SSME ECP was formulated in 2001 which embodies a common 50-year vision for biodiversity conservation and sustainable productivity of the SCS. The ECP was adopted in 2004 through the MOU that was signed by the three countries and was further ratified in 2006. The SSME Tri-National Committee, including three Sub-Committees, was then formed in 2006 tasked to implement the ECP.

224. Since its formation in 2006, however, there have been problems faced related to the sustainability of the Tri-National Committee and its three sub-committees as well as the overall implementation of the ECP. Among the most important of these problems are structural and other institutional constraints related to the Tri-National Committee and its three sub-committees. Another major issue is the limited funding, manpower and overall resources available to the Tri-National Committee and its three sub-committees, the national and local institutions involved in SCS management, and the overall the implementation of the ECP. Still another major issue is the lack of emphasis at the local, national and SCS levels the planning and implementation of projects specifically for small pelagic fisheries which are an economically, environmentally and socially critical resource for the coastal populations in the SCS, particularly the poor.

225. Partly to address the problems and improvement fisheries management in general and small pelagic fisheries in particular, The SCS-SFM Project has been proposed. At its second annual meeting in 2008, the Sub-Committee on Sustainable Fisheries formally approved the preparation of this project proposal for consideration by UNDP and GEF. The conduct of the Project is expected to significantly increase the chance of success of the implementation of the ECP and SCS management leading to the improved conservation and sustainable management of fisheries resources, particularly small pelagics, in the region.

226. Countries have been allocating substantial financial and manpower resources to manage their fisheries. These indicate the great economic importance of the fisheries sector to each of the three SCS countries. It also shows how much these countries may be prepared to do by way of putting in serious investment for the sustainable management of fisheries resources in general and small pelagic resources in particular in the SCS.

Global Environmental Objective

227. The global environmental goal of the Project is to contribute to the sustainability of fisheries in the SCS by improving the conservation and management of their marine habitat, including its biodiversity and ecological processes to the benefit of the region's coastal communities to restore and sustain the economically and ecologically important small pelagic fisheries in the SCS, primarily for the benefit of communities that are dependent on these resources for livelihood. This is consistent with and directly falls under the GEF 4 International Waters Strategic Programme 1.

228. The development objective of the Project is to improve the condition of fisheries in the SCS to a sustainable level through an integrated, collaborative and sustainable tri-national management and to demonstrate best fisheries management practices in pilot sites in the three SCS countries for subsequent upscaling of lessons learned to the entire SCS. In order to achieve this objective, the GEF is requested to provide financial assistance to the Project in the following five areas or desired project outcomes:

- a. Regional consensus on transboundary priorities and their immediate and root causes. As explained earlier, this outcome involving the conduct of the TDA is used to identify priorities for joint action, root causes and scope for the concerns or opportunities, and serve as the basis for reforms and investments included in the Strategic Action Program (SAP). The TDA process to be undertaken by the Project will create a national TDA consultative group consisting of about 20 members in each country and a regional group of 15 experts to be drawn from the national consultative groups. The process will also conduct of two tri-national, regional workshops during the first 6-12 months of the Project. Before each regional workshop, TDA related activities will furthermore be conducted in each country including a detailed analysis and consultations with stakeholders on the issues in the small pelagic fisheries. In terms of manpower, the TDA process will require the hiring of international/regional consultants and local consultants including fisheries biologists, socio-economists and legal and institutional experts as well as workshop facilitators and workshop documentors. GEF will provide \$300,000 for the TDA.
- b. Agreement on regional and national legal, policy and institutional reforms for improved fisheries management. This outcome will require the conduct of the SAP which builds on the TDA. The SAP will also result to the formulation of legal, policy and institutional reforms to improve the status of the small pelagic fisheries at the national and regional

levels. The first output of this outcome is the SAP which will serve as the sub-regional framework for a prioritized set of national and regional actions to achieve the objective of improving the condition of small-pelagic fisheries in the SCS. National and regional consultations will be conducted for the SAP as well as two workshops at the national level in each of the three countries. The SAP process will also require the services of the international/regional consultants and local consultants and workshop facilitators and documentors hired earlier for the conduct of the TDA. The second output of this outcome is the establishment of collaborative agreements with relevant regional and sub-regional organizations in the pursuance of the objectives, outcomes, outputs, and activities of the Project which is one of the functions of the Regional Project Manager. GEF is expected to provide **\$520,000** for this outcome.

- c. Strengthening of existing institutions and introduction of reforms to catalyze implementation of policies on reducing overfishing and improving fisheries management in the SCS and strengthening national fisheries laws and policies. This outcome will address institutional and related challenges at the national and regional levels for the implementation of the SAP. Its first output is the Strengthened SSME Tri-Com for the SCS and its Sub-Com on Sustainable Fisheries. An activity under this is the conduct of an institutional study by a regional institutional, monitoring and evaluation specialist that will deal on the policy, legal and institutional improvements that need to be done, develop a plan to monitor and evaluate the performance of SCS management organizations and the Project as a whole and take the lead in implementing it. The Project will also hire a resource mobilization specialist to develop a plan for the sustainable financing and take the lead in implementing the plan, and generating funds. The second output of this outcome is the Strengthening of existing national inter-ministerial committees for effective implementation of the agreed action programs for SCS. For this, the three sub-com/national coordination support specialists hired by the Project will conduct meetings and consultation in each of the SCS countries to develop measures to address the institutional and related problems these national institutions are facing and take the lead in implementing them. GEF would provide **\$550,000** for this outcome.
- d. Increased Fish Stocks at Demonstration Sites (5-10 percent increase). The Project will promote and adopt an integrated fisheries management approach of Growth, Control and Maintenance (GCM) mechanisms to achieve the target of increasing fish stocks at demonstration sites in the three countries. The five outputs of this outcome are a) establishment of one demonstration site and another replication site for each country; b) ICM plans for fisheries management, prepared and implemented at each demonstration site and initiated at each replication site; c) establishment of new or strengthening of existing local inter-sectoral committees for effective implementation of local ICM plans; d) better understanding of stocks of small pelagic fisheries in the SCS, to include the following: a) estimates of populations levels of target species/groups; and b) biology and ecology of target groups of small pelagic fishes; and e) per capita income at demonstration sites increased by 10 percent. To achieve these outputs, the Project will physically establish demonstration sites in selected areas in the three countries, hire staff and consultants to attain the various desired outputs, prepare and implement ICM plans for these sites, establish new management structures or strengthen existing ones in the sites, conduct studies on the biological and physical aspects of coastal resources and populations in these sites; and work to attain the desired objective of increasing incomes at the demonstration sites by at least 10 percent by the end of the Project. GEF would provide **\$1,050,000** to achieve this outcome.

- e. Knowledge management and replication of lessons learned. This fifth outcome involves the formal recording of knowledge, lessons, and best practices at the demonstration site; country, and regional levels. The RPM will facilitate the transfer and dissemination to local, regional, and international channels and audiences. A project website will also be one of the major outputs from this outcome as well as journal publications, brochures, policy briefs and other written materials. The output of this outcome is the Capture, application and dissemination of knowledge, lessons and best practices within the SCS and other LMEs. A knowledge management specialist will be hired to take the lead in all the activities under this outcome of the Project. GEF would provide **\$190,000** for this outcome.
- f. Finally, the Project will establish a regional PMU to take charge of the overall management of the Project. This office will be headed by the RPM to be assisted by a Program Assistant and an Administrative Assistant. The office will be provided the necessary facilities and equipment for its efficient and effective operations. GEF would provide **\$280,000** to finance the cost of the PMU.

229. Co-financing from various sources will complement the GEF financial assistance to the Project. The national governments of the three SCS countries will contribute significant funding in the forms of cash and/or in-kind for the implementation of some of the project outcomes and outputs and manpower for the implementation of regional and national activities while the local governments will provide manpower and other material inputs in the establishment and operation of the demonstration sites. Other co-financing sources for the Project are international and regional fund donors, international and domestic NGO partners, local private sector entities in the demonstration sites and other interested stakeholders.

230. The total co-financing committed to the Project from all funding sources is **\$3,160,000** while the total GEF funding committed is **\$2,890,000** for project implementation. The funding from GEF represents the incremental costs of improving the national and regional policy and management measures to address the transboundary and ecosystem approach to fisheries management in the SCS. The importance given by the three SCS countries to the sustainable management and exploitation of fisheries resources is evident through their national policies and regional initiatives through the SSME ECP and Tri-Com and Sub-Committees. The countries are eager to spend resources in partnership with the GEF and other regional, national and local partners to commence and put in place the desired management process.

PART II: Logical Framework Analysis

PROJECT STRATEGY	OBJECTIVELY VERIFIABLE INDICATORS AND CONDITIONAL FACTORS				
GOAL	To contribute to the sustainability of the fisheries in the SCS by improving the conservation and management of their marine habitat, including its biodiversity and ecological processes to the benefit of the region's coastal communities				
OBJECTIVE	To improve the condition of the fisheries and their habitats in the SCS through an integrated, collaborative and sustainable tri-national management				
	INDICATOR	BASELINE	TARGET	SOURCES OF VERIFICATION	RISKS AND ASSUMPTIONS
Component 1- Transboundary Diagnostic Analysis (TDA) for SC LME					
Outcome 1: Regional consensus on transboundary priorities, their immediate and root causes	TDA employing accepted methodology Status of acceptance of the results of the TDA by the SSME Tri-Com and Sub-Com on Sustainable Fisheries	GIWA (TDA) for SCS Report completed in 2002; Biodiversity and socio-economic assessments for SSME in 2000 (in SSME ECP) Profile of Coastal and Marine Fisheries, Country Reports of Indonesia, Malaysia, and Philippines (2009)	Updated TDA and analysis of unsustainable exploitation of marine resources delivered on the 2 nd year of the Project TDA on regional priorities and their immediate and root causes in the Sulu-Celebes Sea accepted by the SSME Tri-Com and the Sub-Com on Sustainable Fisheries right after completion of the report.	Reports of national consultations on Scoping of fishery issues and national consultation on Causal Chain Analysis Reports of the meetings of the SSME Tri-Com and the Sub-Com on Sustainable Fisheries	Assumptions – national consultations will be implemented in a coordinated and timely manner, leading to the regional consultations; funds will be disbursed to national implementers efficiently; data and information from (ICM) are available Risks – National consultations may be delayed by local events, e.g., elections, unavailability of stakeholders

Output 1.1: TDA for SCS LME	TDA Report	<p>GIWA (TDA) for SCS Report completed in 2002 focusing on watershed, coastal and marine ecosystems in the SCS.</p> <p>National biodiversity assessment and socio-economic assessments for SSME conducted and integrated into a regional assessment in 2000. This was validated a tri-national biodiversity visioning workshop. The regional biodiversity and socio-economic assessment provided the background for the preparation of Vision, Objectives, and Framework of Action for the SSME ECP.</p>	<ol style="list-style-type: none"> 1. Completed biophysical profile of the SCS and coastal areas including comprehensive evaluation pf fisheries, important habitats, such as mangroves, sea grass beds 2. Completed socio-economic and governance profile of the SCS and resource user groups, market networks, productive value chains, and market access opportunities, as well as economic valuation of ecosystem services and goods 3. Causal chain analysis on unsustainable exploitation of fisheries conductedand options to address national and 	As above	As above
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		The situation in each country is described in the above documents.	transboundary problems proposed 4. TDA approved by National Inter-ministerial Committees and tri-National Steering Committee. 5. Comprehensive stakeholder assessment completed and stakeholder integration and engagement plan developed for the entire LME		
Component 2 - Regional and national legal, policy and institutional reforms for improved fisheries management					
Outcome 2: Recommendations on regional and national legal, policy and institutional reforms for improved fisheries management	Status of appropriate regional and national legal, policy and institutional reforms and collaborative agreements for improved management of fishery resources	Regional and national policies are described in section prepared under the SSME ECP SSME Sub-Committee on Sustainable Fisheries Action Plans for 2008-2010	SAP endorsed by the SSME Tri-Com at the start of the third year of the Project Ministerial endorsement or approval of the SAP with the completion of the SAP and implemented thereafter. Collaborative agreements with regional organizations	Project monitoring and evaluation reports Minutes of meetings the SSME Tri-Com and Sub-Com on Sustainable Fisheries	Assumptions – Continuing cooperation within the entire SSME governance structure at the regional, national and local levels Risks – Among others, these would include the non-cooperation and change of priorities of the national governments, lack of budgets, resources and overall capacity to implement the needed reforms, and deterioration of security relationships between countries that could hamper regional cooperation.

			are established starting the first year of the Project.		
Output 2.1: Regional Strategic Action Program	Status of SAP including the national strategic action programs	SAP for SSME has not been formulated but related plans have been adopted, including the ECP and SDS-SEA, the implementation of which is led by PEMSEA SSME Sub-Committee on Sustainable Fisheries Action Plans for 2008-2010	The SAP, together with the national action programs are completed and adopted at the beginning of the third year of the Project and implemented thereafter. Considering financial constraints, the priority for implementation will be on the fisheries component, particularly small pelagics	Project monitoring and evaluation reports Minutes of meetings the SSME Tri-Com and Sub-Com on Sustainable Fisheries	Assumptions – Interest and cooperation of local, national and regional stakeholders are assumed; availability of scientific knowledge and expertise Risks – Major disagreements between stakeholders on the mission, vision, programs, projects and activities in the SAP and national action plan are potential risks.
Output 2.2: Collaborative agreements with relevant regional and subregional organizations	Status of collaborative agreements with relevant regional and subregional organizations	There are no collaborative agreements at present. Potential agreements can be established with ASEAN, (BIMP-EAGA), SEAFDEC, WorldFish Center, CTI, PEMSEA, COBSEA, CI, WWF,	Collaborative agreements with relevant regional and subregional organizations have been initiated, signed and implemented over the life of the Project	Project monitoring and evaluation reports Minutes of meetings the SSME Tri-Com and Sub-Com on Sustainable Fisheries Pronouncements	Assumptions – Interest of relevant regional and sub-regional organizations in SSME management and the Project is assumed. Full capacity of both parties to implement signed agreements is assumed. Risks – Conflict of interests and mandates between the regional and sub-regional organizations and the SMME program, limited capacity for

		TNC, and other relevant organizations.		from partner organizations	implementation, and rivalry and conflicts between organizations and their managers.
Component 3 – Introduction of institutional reforms to catalyze implementation of policies on reducing overfishing and improving fisheries management in the SCS and strengthening national fisheries laws and policies					
Outcome 3 – Strengthening of existing institutions and introduction of reforms to catalyze implementation of policies on reducing over-fishing and improving fisheries management in the SCS that will benefit the SCS coastal communities; strengthened national fisheries laws and policies	Status of institutional reforms introduced at the regional and national levels	Regional and national institutions for SSME management are in place but reforms for improved management are needed. National laws and related legislations are also in place but need to be reviewed for necessary revisions and amendments.	Institutional strengthening activities are initiated in the first year of the Project and continuing in subsequent years. SAP is properly implemented with better institutions.	Refer to Outputs 3.1 and 3.2.	<p>Assumptions - Active involvement of the management and staff of regional and national institutions involved in SSME management is assumed. Capacity of regional and national institutions to implement reforms is assumed. Willingness of national lawmakers to prioritize the revision or amendment of fishery laws is assumed.</p> <p>Risks – The risks include the bureaucratic red tape in national governments that make it difficult to institute reforms, indifference or resistance of government personnel in institutional reforms, and the change of leadership and short term-tenures at the national and ministerial/department levels that can change national priorities.</p>
Output 3.1: Strengthened Tri-Com for	Capacity of the Tri-Com and Sub-Com on Fisheries for	The Tri-Com and Sub-Com on Sustainable Fisheries	Institutionally strengthened Tri-Com and Sub-Com on	Project monitoring and evaluation reports	The assumptions and threats are closely similar to those of Outcome 3. An added risk is the current financial

SCS and its Sub-Com on Sustainable Fisheries	implementation of the SAP and related mandated functions	have strengths and opportunities that can be exploited and weaknesses and threats that need to be mitigated for their strengthening. Models for institutional strengthening exist based on experiences by other regional organizations.	<p>Sustainable Fisheries starting the first year of the Project and agreement on options for the regional mechanism.g., evolution of the Tri-Com into a Commission for the SCS as may be decided by the countries.</p> <p>Options for long-term financing for SSME are developed by the second year of the Project. Additional cofinancing is raised for project activities.</p>	<p>Efficiency in the implementation of the SAP and dispensation of functions of the Tri-Com and Sub-Com on Sustainable Fisheries</p> <p>Available resources</p>	crisis which could make the search for sustainable financing difficult at least in the short-term.
Output 3.2: Strengthening of existing national inter-ministerial committees for the effective implementation of the agreed action plans for SCS	Status of relevant national-level SSME institutions	The technical working groups/presidential commission in the three SSME countries exist but have limited capacity in terms of funds, manpower and overall resources.	Strengthened national working groups/presidential commission starting the second year of the Project; Existing national fisheries laws are reviewed starting the first year of the Project and revised thereafter if needed.	<p>Project monitoring and evaluation reports</p> <p>Minutes of meetings the SSME Tri-Com and Sub-Com on Sustainable Fisheries</p>	<p>The assumptions and threats are closely similar to those of Outcome 3 and Output 3.1.</p> <p>An added risk is the low priority that lawmakers may place on the revision and amendment of fishery plans. Another risk is the implementation record of SSME countries with limited capacities.</p>

Component 4 - Demonstration of best fisheries management practices in critical sites of the SCS
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Outcome 4 – Increased fish stocks at demonstration sites (5-10 percent increase)	<p>Fish biomass of selected small pelagic species in SCS as indicated by the Catch Per Unit of Effort (CPUE) and/or other applicable indicators depending on availability of financial resources (e.g. assessments through fish population dynamics, etc.)</p> <p>Possible supporting indicators are discussed in the project outcomes and outputs.</p>	<p>It is recognized by several scientific studies that the small pelagic fisheries are overfished although the extent of overfishing remains to be verified</p> <p>Sulu Sea – total fish biomass estimated at 800,000 mt (2002); reported total landings was 1,000,000 mt in 2004 (FAO, 2005)</p> <p>Celebes Sea – biomass estimate is unknown</p> <p>Celebes (=Sulawesi) Sea, Indonesian territory – 385,000 tons (est.)</p>	<p>Within the Demonstration Sites, adoption of ecosystem-based management</p> <p>Increase of around 5 percent in the CPUE within the life of the Project in the fishing grounds/Demonstration Site</p>	<p>Monitoring and evaluation studies in Demonstration Sites and for the entire Project</p> <p>National and regional studies conducted by partners</p>	<p>Assumptions – The small pelagic fisheries stocks are shared and transboundary stocks; Stock definition study is successfully conducted (Output 1.3); Fisheries Management Plans in Demonstration Sites across the SCS are implemented in timely and coordinated manner</p> <p>Risks – IUU fishing is not regulated successfully</p>
Output 4.1 – Establishment of one demonstration site and another replication site	<p>Number of demonstration and replication sites</p> <p>Status of appropriate agreements, e.g., MOUs, with local</p>	<p>Demonstration Sites:</p> <p>Indonesia: Tarakan PCA</p> <p>Malaysia: Semporna, Tawau Fishing Zone</p> <p>Philippines: Zamboanga City</p>	<p>Established Demonstration and Replication sites for SCS SFM on the first semester of the Project.</p> <p>Memorandum of</p>	<p>Project monitoring and evaluation reports</p> <p>Record of meetings with stakeholders: local government</p>	<p>Assumptions – Integrated Coastal Management Plan is prepared and approved by appropriate body; Fisheries Management Plans are prepared and accepted by stakeholders for implementation</p>

for each country	government partners	<p>Replication Sites: Indonesia: Kwandang Malaysia: Sandakan, Sandakan Fishing Zone Philippines: Bongao, Tawi-Tawi</p> <p>The above sites are within the identified 7 Globally important Priority Conservation Areas in the SSME ECP</p> <p>Some ECP-related projects are being implemented in some of the sites; formal agreement with respect to this Project will be established.</p>	<p>Understanding signed with local partners on the first year of the Project</p> <p>Activities initiated in the replication sites by the third year of the Project</p>	units and fisheries management agencies	Risks – Changes in District Officer or Mayors in Local Government Units; local government leaders, with jurisdiction on fishing grounds and coastal habitats, do not cooperate; Secondary or tertiary stakeholder block establishment of Demonstration Site
Output 4.2 – Integrated Coastal Management (ICM) plans for fisheries management, Prepared and	Status of Local ICM Plans with fisheries management plans in Demonstration and Replication Sites	<p>INO – no ICM Plan at present; government laws enable cities and districts to employ ICM (Law 32/1999)</p> <p>MAL – spatial land-</p>	<p>Formulated and adopted ICM Plans in Demonstration sites by the second year of the Project</p> <p>Fisheries management activities are</p>	Maps of coastal and marine ecosystems, land-uses, proposed zoning plans, including conservation of habitats of small pelagic fishes (to	<p>Assumptions – GIS technical support is available; local government unit is supportive; governmental agencies cooperate; stakeholders cooperate and participate in consultations</p> <p>Risks – Change in leadership in local government unit;</p>

implemented at each demonstration site and initiated at each replication site		<p>use planning required at District level, under the Town and Regional Planning Code; Shoreline Management Plan provide detailed guidance on allowable activities on shoreline; draft policy on Integrated Coastal Zone Management Plan</p> <p>PHI – none at present although ICM Plans for coastal municipalities and cities required by law</p>	<p>implemented by third year of Project</p> <p>Initiated ICM Plans in Replication sites before the end of the Project</p>	<p>support regulations to promote Growth of small pelagic fish populations)</p> <p>ICM Plans for Demonstration and Replication sites</p> <p>Enactment of ICM Plans by appropriate body in each demonstration site</p> <p>Project monitoring and evaluation reports</p>	<p>A secondary or tertiary stakeholder blocks enactment of ICRM Plans; Intense and frequent storms destroy habitats of small pelagic fishes</p>
Output 4.3 – Establishment of new or strengthening of existing local inter-sectoral committees for effective implementation of local ICM plans	<p>Status of inter-sectoral committees in each Demonstration site</p> <p>Level of participation and inputs from all stakeholders and relevant sector are in the ICM plans</p>	<p>Indonesia – local government; traditional rights and norms instituted for community-based and collaborative management (Law 22/1999)</p> <p>Malaysia - District Planning Units, Semporna Sabah</p>	<p>Inter-sectoral committee relevant stakeholders from government, non-government, fisher groups, private sector and other groups have been formed and actively carrying out mandated functions in each demonstration site, starting on the second</p>	<p>Project monitoring and evaluation reports</p> <p>Meeting reports of local Inter-sectoral Committees</p>	<p>Assumptions – Local government units will work closely with the fisheries managers of each country; the ICM Plan will be adopted by the government</p> <p>Risks – The concept of integration of fisheries management in local planning is not understood or accepted by local government units.</p>

		<p>Development Corridor Action Committee, Semporna Tourism Action Committee, Sabah Environment Protection Agency, , Integrated Coastal Zone Management Unit, Town and Regional Planning Department</p> <p>Philippines – Bantay Dagat (Sea Watch); Fisheries and Aquatic Resources Management Council (FARMC)</p>	<p>year of the Project</p> <p>Similar committees formed in replication sites before the end of the Project</p>		
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<p>Output 4.4 – Better understanding of stocks of small pelagic fisheries in the SCS, to include the following: a) estimate of populations levels of target species groups; and b) biology and ecology of target groups of small pelagic fishes</p>	<p>Stock definition using appropriate scientific techniques depending on availability of financial resources.</p> <p>Methodology for the collection of data and information</p> <p>Trends in spatial and temporal scales of small pelagic</p>	<p>Findings for some small pelagic species indicate that fish stocks are shared by countries in the SSME from results of the migration study of Indonesia and Malaysia under SEAFDEC</p> <p>Preliminary study of small pelagic fishes in Sulawesi Sea under FAO</p>	<p>Completed regional study in collaboration with cooperating agencies such as SEAFDEC</p> <p>Common scientific methodologies are utilized in studies for comparability</p> <p>Results of study incorporated in national and regional policies</p> <p>Results of studies support fisheries management (G, C, M) in Demonstration Sites</p>	<p>Project monitoring and evaluation reports</p> <p>Scientific reports</p>	<p>Assumptions – The human resources are available for the studies; Funds from cofinanciers for supporting research studies are available; Fishing industry accommodate and assist research activities; Research collaboration with SEAFDEC and 3 countries is agreed upon and implemented</p> <p>Risks – Costs of inputs increase beyond the budget; molecular analyses are delayed due to cofinancing constraints</p>
<p>Output 4.5 – Per capita income at demonstration sites increased by 10 percent</p>	<p>Per capita income from fishing and non-fishing sources</p>	<p>Available data from secondary sources and consultations are listed below. Baseline will be established from primary sources during project inception.</p> <p>INO – USD fishing household – USD 726/fishing and non-</p>	<p>10 percent increase over life of the Project</p>	<p>Project monitoring and evaluation reports specifically from Demonstration sites; special surveys to be commissioned by the Project</p> <p>Municipal/district fisheries statistics</p>	<p>Assumptions – Fishing households cooperate in providing information on income; Non-fishing households cooperate in providing information on income; Municipal/District Fisheries Statistics are gathered regularly</p> <p>Risks - Increased international demand for small pelagic fishes; increased IUU; unregulated entry</p>

		<p>fishing household - baseline will be established from primary sources during project inception</p> <p>MAL – Fishing households – USD 1,713⁹⁷/year (RM 6,000/year) Non-fishing households – RM 900</p> <p>PHI – Municipal fishing household : USD 1,036/year (PhP 43,560/year)⁹⁸</p> <p>Commercial fishing (sardine purse seiner): Ave. annual catch per purse seiner = 8,000 MT Ave. annual income per purse seiner = USD 3.52 million</p>			
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⁹⁷ 1 USD = 3.5 MYR (May 11, 2009)

⁹⁸ 1 USD = PhP 47.76 (May 16, 2009)

Component 5: Knowledge management and replication of lessons learned					
<p>Outcome 5 – Facilitated uptake of knowledge and lessons learned</p> <p>Output 5.1 – Captured, applied and disseminated knowledge, lessons and best practices within the SCS and other LMEs</p>	<p>Scope, frequency and dissemination of information, education and communication (IEC) reports as well as evaluation and monitoring reports</p>	<p>Fisheries statistics are usually collected and gathered at the municipal/district level but are not analyzed and disseminated systematically. Results of scientific studies could find their way in publications of donor agencies, NGOs, academic institutions and in scientific journals and in the gray literature. There is limited production of information and lessons learned that is accessible to the general public.</p>	<p>Regularly conducted IEC, monitoring and evaluation reports covering local, national and regional activities</p> <p>Creation of a project website that is linked to the websites of participating government agencies, UNDP, CI and IWLEARN.net</p> <p>Dissemination of above reports to various channels and audiences including through the IWLEARN.net</p>	<p>Project monitoring and evaluation reports</p> <p>Publications</p> <p>Project website</p> <p>Contents of relevant internet sites, including IWLEARN.net</p>	<p>Assumptions – Outputs from the Project are of the expected quality that would merit publication and dissemination.</p> <p>Risks - None</p>

SECTION III: TOTAL BUDGET AND WORK PLAN

TABLE 1. Total Budget: GEF

Award ID:	00058166
Award Title:	PIMS 4063 IW FSP Sulu-Celebes Sea Sustainable Fisheries Management
Business Unit:	PHL10
Project Title:	PIMS 4063 IW FSP Sulu-Celebes Sea Sustainable Fisheries Management
Implementing Partner (Executing Agency)	UNOPS

PROJECT OUTCOMES	Responsible Party	Source of Funding	BUDGET DESCRIPTION		Year 1	Year 2	Year 3	Year 4	Total (US\$)	Budget Note:
OUTCOME 1: Regional agreement on transboundary priorities, immediate and root causes	UNOPS	GEF	71200	International/Regional Consultants	22,000				22,000	
			71300	Local Consultants					-	
			71600	Travel					-	
			72100	Contractual - Companies	278,000				278,000	
			74200	Audio Visual and Print Production					-	
			74500	Others (Office Costs)					-	
Sub-total					300,000				300,000	

PROJECT OUTCOMES	Responsible Party		Source of Funding	BUDGET DESCRIPTION		Year 1	Year 2	Year 3	Year 4	Total (US\$)	Budget Note:
OUTCOME 2: Recommended regional and national legal, policy and institutional reforms for improved fisheries management		UNOPS	GEF	71200	International/Regional Consultants	40,000	60,000	60,000	56,800	216,800	
				71300	Local Consultants						
				71600	Travel						
				72100	Contractual - Companies	9,815	147,655	40,415	155,315	353,200	
				74200	Audio Visual & Print Production						
				74500	Others (Office Costs)						
Sub-total						49,815	207,655	100,415	212,115	570,000	
OUTCOME 3: Introduction of institutions and reforms to catalyze implementation of policies; strengthened national fisheries laws and policies		UNOPS	GEF	71200	International/Regional Consultants	42,700	45,200	45,200	48,400	181,500	
				71300	Local Consultants	33,000	39,600	39,600	39,600	151,800	
				71600	Travel	42,000	42,000	42,000	42,000	168,000	
				72100	Contractual - Companies						
				74200	Audio Visual & Print Production						
				74500	Others (Office Costs)	20,275	9,475	9,475	9,475	48,700	
Sub-total						137,975	136,275	136,275	139,475	550,000	
OUTCOME 4: Increased fish stocks at demonstration sites		UNOPS	GEF	71200	International/Regional Consultants	3,000	22,500	22,500	22,500	70,500	
				71300	Local Consultants	101,400	138,900	125,400	125,400	491,100	
				71600	Travel	46,800	45,000	41,850	41,850	175,500	
				72100	Contractual - Companies	54,000				54,000	
				74200	Audio Visual & Print	15,000	27,000	27,000	27,000	96,000	

PROJECT OUTCOMES	Responsible Party	Source of Funding	BUDGET DESCRIPTION		Year 1	Year 2	Year 3	Year 4	Total (US\$)	Bud get Not e:
				Production						
			74500	Others (Office Costs)	43,525	23,925	22,725	22,725	112,900	
Sub-total					263,725	257,325	239,475	239,475	1,000,000	
OUTCOME 5: Capture, application and dissemination of knowledge, lessons and best practices within the SCS and other LMEs	UNOPS	GEF	71200	International/Regional Consultants						
			71300	Local Consultants	24,750	32,450	24,750	24,750	106,700	
			71600	Travel						
			72100	Contractual - Companies		30,000			30,000	
			74200	Audio Visual & Print Production						
			74500	Others (Office Costs)	13,325	13,325	13,325	13,325	53,300	
Sub-total					38,075	75,775	38,075	38,075	190,000	
Project Management Costs	UNOPS	GEF	71200	International/Regional Consultants	40,000	48,000	48,000	48,000	184,000	
			71300	Local Consultants	10,000	12,000	12,000	12,000	46,000	
			71600	Travel	3,125	3,350	3,350	3,350	13,175	
			72100	Contractual - Companies						
			74200	Audio Visual & Print Production						
			74500	Others (Office Costs)	12,585	8,080	8,080	8,080	36,824	
Sub-total					65,710	71,430	71,430	71,430	280,000	
TOTAL					855,300	748,460	585,670	700,570	2,890,000	

PROJECT OUTCOMES	Responsible Party	Source of Funding	BUDGET DESCRIPTION	Year 1	Year 2	Year 3	Year 4	Total (US\$)	Budget Note:
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Summary of Funds:

GEF	cash	855,300	748,460	585,670	700,570	2,890,000
Governments	cash + in-kind	550,000	622,000	869,000	959,000	3,000,000
Conservation International	cash	140,000	0	0	0	140,000
UNDP (BDP, Phi)	In-kind	25,000	25,000	20,000	20,000	90,000
TOTAL		1,570,300	1,395,460	1,474,670	1,679,570	6,120,000

Detailed Budget notes:

General:		The rates of international and local consultants follow the UNDP guidelines for each country. Cost estimates follow local conditions. Office costs cover supplies, communications, utilities, furniture, office equipment and related expenditures necessary to maintain an office, where necessary.
OUTCOME 1		The conduct of the TDA will be subcontracted to Conservation International Philippine Country Office. Some of the costs for consultants in Annex C of the CEO Endorsement Form are therefore included in budget line 7210.
OUTCOME 2		International consultants will prepare the regional SAP; local consultants will "bring" down the regional SAP to the national level; implementation will be done through the existing regional and national institutions involved in the project.
OUTCOME 3		Local consultants will be hired to assist the members of the SCS Tri-Com and SCS Fisheries Sub-Com. The budget also covers the cost of international consultants on resource mobilization and monitoring and evaluation.
OUTCOME 4		Each demonstration site is allocated \$350,000 with the breakdown by line item approximately

PROJECT OUTCOMES	Responsible Party	Source of Funding	BUDGET DESCRIPTION	Year 1	Year 2	Year 3	Year 4	Total (US\$)	Budget Note:
			the same for each country.						
OUTCOME 5			Monitoring and evaluation activities are funded under Outcome 4.						
PROJECT MANAGEMENT:			The Regional Project Coordinator will be hired on a part-time basis, at about 2 days per week. See Annex C in the CEO Endorsement Form for detailed breakdown of consultants' costs.						

TABLE 2: Project Work Plan

Component	Year 1				Year 2				Year 3				Year 4				Relevant outcomes and outputs
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	
Component 1 - Transboundary Diagnostic Analysis																	
1. National Preparatory Activities		x															Outcome 1 / Output 1.1
2. National Workshop																	Outcome 1 / Output 1.1
Scoping of environmental issues			x														
Causal chain analysis			x														
3. Regional Workshops																	Outcome 1 / Output 1.1
Scoping of environmental issues				x													
Causal chain analysis				x													
4. TDA endorsement																	Outcome 1 / Output 1.1
Component 2 - Regional agreement on governance reforms for sustainable fisheries management																	
1. SAP																	Outcome 2 / Output 2.1
a. Preparatory activities (national and regional)			x	x													
b. Regional consultations and consensus building on policy options					x	x											
c. SAP preparation and adoption					x	x	x	x	x	x	x						
2. Regional collaborative agreements																	Outcome 2 / Output 2.2
a. Negotiations on collaborative agreements				x	x	x											
b. Formulation & signing of agreements at the ministerial level					x	x	x	x									
3. Implementation, Monitoring and Evaluation								x	x	x	x	x	x	x	x	x	Outcome 2 / Outputs 2.1 and 2.2
Component 3 - Introduction of institutional reforms to catalyze implementation of policies on reducing overfishing and improving fisheries management in the SCS and strengthening national fisheries laws and policies																	

1. Validation and revalidation of institutional reforms and policy reform agenda	x		x						Outcome 3 / Outputs 3.1 and 3.2	
2. Implementation, Monitoring and Evaluation									Outcome 3 / Outputs 3.1 and 3.2	
National level	x	x	x	x	x	x	x	x	x	x
Tri-national level	x	x	x	x	x	x	x	x	x	x
Component 4 - Demonstration of best fisheries management practices in critical sites of teh SCS										
1. Mobilization at site level	x								Outcome 4 / Outputs 4.1, 4.2, 4.3 and 4.4	
2. Consultations with local governments and partners	x	x	x	x	x	x	x	x	x	Outcome 4 / Output 4.1
2. Establishment and/or mobilization of local inter-sectoral committees for effective implementation	x	x							Outcome 4 / Output 4.3	
3. Formulation of ICM Plans									Outcome 4 / Output 4.2	
b. Secondary data gathering	x	x	x							
c. Field assessments/Participatory Coastal Resource Assessment (PCRA)	x	x	x	x						
d. Prioritization of issues and analysis of causes	x	x	x	x						
e. Consultations and adoption			x	x	x	x				
f. Database development			x	x						
4. Conduct of requisite supporting research studies at the site level	x	x	x	x	x	x			Outcome 4 / Output 4.4	
5. Implementation, Monitoring and Evaluation	x	x	x	x	x	x	x	x	x	Outcome 4 / Outputs 4.1, 4.2, 4.3 and 4.4
Component 5 - Knowledge management and replication of lessons learned										
1. Creation and maintainance of project website	x	x	x	x	x	x	x	x	x	Outcome 5 / Output 5.1
2. Contributions to IWLEARN.net	x	x	x	x			x	x	x	Outcome 5 / Output 5.1

3. Publication of TDA and SAP report			x	x						Outcome 5 / Output 5.1; Outcome 1 / Output 1.1; Outcome 2 / Output 2.1
4. Regular production of project brochures	x	x		x	x	x	x	x	x	Outcome 5 / Output 5.1
5. Publications in scientific and popular journals		x			x		x		x	Outcome 5 / Output 5.1; Outcome 4 / Output 4.4
6. Preparation of project monitoring and evaluation reports	x	x	x	x	x	x	x	x	x	All outcomes and outputs
Project Management										
1. Mobilization of Project Management Office	x									
2. Project Coordination, Monitoring and Evaluation		x	x	x	x	x	x	x	x	

SECTION IV: ADDITIONAL INFORMATION

PART I: Other Agreements

Endorsement Letters

The endorsement letters from the GEF Operational Focal Points in Indonesia, Malaysia and Philippines have been provided during GEF Council approval of the PIF.

Co-financing Letters

The cofinancing letter from the countries and other cofinanciers are attached.

PART II: Terms of Reference for Key Project Staff and Key Subcontracts funded by GEF

Table 1. Terms of reference for project staff and consultants

Position Titles	Rate (\$)	Duration (person-days/months)	Tasks to be Performed/Relevant Outcomes and Outputs
For Project Management			
International			
Regional Project Manager (RPM)	8,762/ person-month	21 person-months (part-time)	Manage the project activities, supervise all the project activities and ensure completion of deliverables, hire and supervise regional staff and regional and national consultants, project procurement and disbursement, and attend to all other related duties. Reports to the Project Steering Committee.
Local			
Project Administrative and Financial Officer (1)	1,000/ person month	46 person-months (full-time)	Manage the daily administrative operations of the PMU, ensure that the financial, personnel and procurement matters of the PMU and the Project are adequately addressed, and attend to all other related duties. Reports to the RPC.
For Technical Assistance			
International			
TDA-SAP Coordinator (Regional)	9,000/ person-month	27 person-months	Provide overall responsibility and leadership during the entire TDA-SAP preparation and the submission of the final TDA-SAP and attend to all other related duties related to Outcomes 3 and 5 [all Outputs in Outcomes 1, 2, 3 and 5] . <i>These tasks will be added to the TOR of the RPM, with the RPM to be hired for a total of 28 months for the duration of the Project.</i>
Regional Fisheries Biologist	8,800/ person-month	26 person-months	Provide regional and sub-regional physical, biological and related technical analysis and reports for the TDA-SAP and undertake all other relevant activities during the TDA-SAP preparation, provide inputs to relevant activities in the three demonstration sites [all Outputs in Outcomes 1, 2, 4] . <i>These tasks will be form part of a Technical Staff that will assist the RPM and will be based at the PMU. The option is to hire a full-time qualified expert as a national staff at a rate of \$5,000 per person-month.</i>

Regional Legal and Institutional Expert	400/ person-day	165 person-days	Provide regional and sub-regional legal, policy, institutional and related analysis and reports for the TDA-SAP and undertake all other relevant activities during the TDA-SAP preparation [Output 1 and Output 2.1]
Regional Socio-Economist	400/ person-day	126 person-days	Conduct regional and sub-regional social, economic and related analysis and reports for the TDA-SAP and attend to all other relevant activities during the TDA-SAP preparation [Output 1 and 2.1]
GIS Specialist	400/ person-day	33 person-days	Provide GIS-related services and support for the TDA-SAP and undertake all other relevant activities during the TDA-SAP preparation [Output 1 and Output 2.1]
Resource Mobilization Specialist	350/ person-day	88 person-days	Develop a plan for the sustainable financing of the Tri-National Committee, Sub-Committee on Sustainable Fisheries and the Project as a whole and take the lead in implementing the plan, and generating funds [Output 3.1]
Local			
Monitoring and Evaluation Specialist	250/ person-day	132 person-days	Undertake a study on the policy, legal and institutional improvements that need to be done to strengthen the Tri-National Committee and the Sub-Committee on Fisheries, develop a plan to monitor and evaluate the performance of these management organizations and the Project as a whole and take the lead in implementing it [Output 5.1]
Knowledge Management Specialist	250/ person-day	264 person-days	Prepares the communication plan for the Project and implement it, including designing the project website, providing inputs to IWLEARN.net, preparing project brochures and briefs. Coordinates the work of the site-based IEC experts. [Output 5.1 primarily and all relevant outputs]
Editor	150/ person-day	44 person-days	Edit the TDA-SAP and attend to all other related duties (may be sub-contracted) [Output 1 and Output 2.1]
Lay-out Artist	100/ person-day	11 person-days	Lay-out the TDA-SAP and attend to all other related duties (may be subcontracted) [Output 1 and Output 2.1]
Local Fisheries Biologists	2,500/ person-month	21 person-months	Provide national and local physical, biological and related technical analysis and reports for the TDA-SAP and undertake all other relevant activities during the TDA-SAP preparation [Output 1 and

			Output 2.1] Technical assistance in the conduct of special and appropriate fisheries studies at the local/site level such as those pertaining to fishing gears and selectivity, fisheries biology, etc., and provision of corresponding technical analysis and reports for the Project [Outcome 4 – all relevant outputs]
Local Legal and Institutional Experts	2,500/ person-month	39 person-months	Provide national and local legal, policy, institutional and related analysis and reports for the TDA-SAP and undertake all other relevant activities during the TDA-SAP preparation and providing guidance to site-based work [Output 1 and Output 2.1]
Local Socio-Economists	2,500/ person-month	21 person-months	Conduct national and local social, economic and related analysis and reports for the TDA-SAP and attend to all other relevant activities during the TDA-SAP preparation and providing guidance to site-based work [Output 1 and 2.1]
Facilitators	200/ person-day	39 person-days	Attend and facilitate and all relevant meetings, consultations and other regional and sub-regional gatherings related to TDA-SAP preparation [Output 1 and Output 2.1]
Documenters	100/ person-day	39 person-days	Attend, document and prepare a report of proceedings of all relevant meetings, consultations and other regional and sub-regional gatherings related to TDA-SAP preparation [Output 1 and Output 2.1]
SSME Sub-Com / National Coordination Support Staff (1 for each country)	1,100/ person-month	138 person-months	Serve as focal persons for coordinating the activities of the Sub-Committee on Sustainable Fisheries with the relevant institutions in the three countries and the other international, regional, national and local partners of the Sub-Committee, plan and implement the training plan for sub-committee and national technical working groups/presidential commission members and staff [Output 3.1 and Output 3.2]
Demonstration Site Coordinators (1 for each site)	1,000/ person-month	135 person-months	Daily supervision and coordination of project implementation and activities at the local demonstration site; ensuring that procedures are followed for procurement, accounting, etc. at the local site; Provision of support in the preparation, implementation, monitoring and reporting of the AWP to achieve the project objectives in accordance with the guidelines set by the PMU [Outcome 4 – all relevant outputs.]

Demonstration Site ICM Expert (1 for each site)	2,500/ person-month	48 person-months	Technical assistance in the formulation and implementation of an Integrated Coastal Resource Management (ICRM) Plan for the demonstration site, including consultations with stakeholders [Outcome 4 – all relevant outputs.]
Demonstration Site IEC Expert (1 for each site)	1,500/ person-month	24 person-months	Formulation and implementation of a site-based Communications Strategy and Plan that would convey project information, updates and accomplishments to all concerned stakeholders in an effective and timely manner, and in popular form when necessary, with guidance from the Knowledge Management Specialist [Outcome 4 – all relevant outputs; Output 5.1]
Demonstration Site Institutional / Social Expert (1 for each site)	1,500/ person-month	15 person-months	Provide local legal, policy, institutional and related analysis and reports for the ICM and site-based policy reforms and undertake all other relevant activities with guidance from the Legal/Institutional Specialist [Outcome 4 – all relevant outputs; Output 5.1]
Site Monitoring Staff (1 per site)	600/ person-month	126 person-months	Collection and processing of relevant fisheries data at the local site and reporting results to the Monitoring and Evaluation Specialist [Outcome 4 – all relevant outputs; Output 5.1]
Site Administrative Support Staff (1 per site)	300/ person-month	135 person-months	Administrative and logistical assistance to the Site Coordinator and the site office to meet project objectives [Outcome 4 – all relevant outputs]

PART III: STAKEHOLDER INVOLVEMENT PLAN

The first three tables presented in this section show the results of interviews and consultations with various national and local stakeholders of the Project in Indonesia, Malaysia and the Philippines generated for the purpose of developing the Stakeholder Involvement Plan (SIP).

SIP TABLE 1: DETAILED CONSULTATIONS FOR INDONESIA

Stakeholder	Directorate of Fish Resources, DG of Capture Fisheries
Mandate in terms of marine fisheries issues	Preparation of policy formulation, standardization, technical guidance and evaluation in the field of fish resources. (Notes: Sub Dit. Data and statistics of fisheries is under this directorate)
Involvement in SCS Marine Fisheries	Fisheries statistical data collection and analysis at provincial level (East Kalimantan, Central Sulawesi, Gorontalo and North Sulawesi)
-in all marine fisheries	√
-in small pelagic fisheries	√
Interests in SCS Sulu-Celebes Sea Sustainable Fisheries Management (SCS-SFM) Project	<ul style="list-style-type: none"> - Transboundary Diagnostic Analysis (TDA) – particularly on the Root Causes/Causal Chain Analysis (Outcome) and the complete TDA (Output) - Demonstration of best fisheries management practices in critical sites of the SSME, particularly on the Outcome of increased landings and income and the Output - Demonstration Sites - Reforms agreement on governance reforms for sustainable fisheries management – particularly on research on the Strategic Action Program and the Integrated Local Coastal Management Plan (ICM) - Institutional Strengthening – particularly on the Technical Assistance (TA) for the effective implementation of the ICM model <p>The Research Centre for Capture Fisheries (RCCF) can conduct trainings under the TA and/or supervise monitoring under the ICM.</p>
Potential Conflicts/Threats to Involvement to SCS-SFM Project	None
Mitigation Strategy	
Suggestions and Ideas in the Institutional Arrangements and Management of SCS-	

SFM	
-in all marine fisheries	√
-in small pelagic fisheries	√
Stakeholder	Directorate of Fisheries Enterprises, DG of Capture Fisheries, MMAF
Mandate in terms of marine fisheries issues	Preparation of policy formulation, standardization, technical guidance and evaluation in the field of fisheries enterprises.
Involvement in SCS Marine Fisheries	Fishing business licensing services (licensing issues especially for fishing vessels > 30GT)
-in all marine fisheries	√
-in small pelagic fisheries	√
Interests in SCS Sulu-Celebes Sea Sustainable Fisheries Management (SCS-SFM) Project	- Demonstration of best fisheries management practices in critical sites of the SSME, particularly on the Outcome of increased landings and income and the Output - Demonstration Sites
Potential Conflicts/Threats to Involvement to SCS-SFM Project	None
Mitigation Strategy	-
Suggestions and Ideas in the Institutional Arrangements and Management of SCS-SFM	
-in all marine fisheries	√
-in small pelagic fisheries	√
Stakeholder	Directorate of Conservation and National Marine Park, DG Coastal and Small Islands, MMAF
Mandate in terms of marine fisheries issues	Preparation of policy formulation, standardization, technical guidance and evaluation in the field of conservation and national marine park.
Involvement in SCS Marine Fisheries	Indonesian secretariat of the SSME Sub committee on Sustainable Fisheries
-in all marine fisheries	√
-in small pelagic fisheries	√

Interests in SCS Sulu-Celebes Sea Sustainable Fisheries Management (SCS-SFM) Project	<ul style="list-style-type: none"> - Transboundary Diagnostic Analysis (TDA) – particularly on the Root Causes/Causal Chain Analysis (Outcome) and the complete TDA (Output) - Reforms agreement on governance reforms for sustainable fisheries management – particularly on research on the Strategic Action Program and the Integrated Local Coastal Management Plan (ICM) - Institutional Strengthening – particularly on the Technical Assistance (TA) for the effective implementation of the ICM model. - Demonstration of best fisheries management practices in critical sites of the SSME, particularly on the Outcome of increased landings and income and the Output - Demonstration Sites <p>The RCCF can conduct trainings under the TA and/or supervise monitoring under the ICM.</p>
Potential Conflicts/Threats to Involvement to SCS-SFM Project	None
Mitigation Strategy	
Suggestions and Ideas in the Institutional Arrangements and Management of SCS-SFM	
-in all marine fisheries	√
-in small pelagic fisheries	√
Stakeholder	Directorate of Coastal Resources, DG Marine, Coastal and Small Islands, MMAF
Mandate in terms of marine fisheries issues	Preparation of policy formulation, standardization, technical guidance and evaluation in the field of coastal resources (Sub Dit. Integrated Coastal Resources Management).
Involvement in SCS Marine Fisheries	Carry out ICRM in the SSME area, especially in the Demo site and Replication site
-in all marine fisheries	√
-in small pelagic fisheries	√
Interests in SCS Sulu-Celebes Sea Sustainable Fisheries Management (SCS-SFM) Project	<ul style="list-style-type: none"> - Transboundary Diagnostic Analysis (TDA) – particularly on the Root Causes/Causal Chain Analysis (Outcome) and the complete TDA (Output) - Reforms agreement on governance reforms for sustainable fisheries management – particularly on research on the Strategic Action Program and the Integrated Local Coastal Management Plan (ICM) - Institutional Strengthening – particularly on the Technical Assistance (TA) for the effective implementation of the ICM model.

	- Demonstration of best fisheries management practices in critical sites of the SSME, particularly on the Outcome of increased landings and income and the Output - Demonstration Sites
Potential Conflicts/Threats to Involvement to SCS-SFM Project	None
Mitigation Strategy	
Suggestions and Ideas in the Institutional Arrangements and Management of SCS-SFM	
-in all marine fisheries	√
-in small pelagic fisheries	√
Stakeholder	DG of Control and Surveillance of Marine and Fisheries Resources
Mandate in terms of marine fisheries issues	To formulate and implement the policy and technical standardization in the control and surveillance of marine and fisheries resources
Involvement in SCS Marine Fisheries	Carry out surveillance in the Sulawesi Sea Fisheries Management Area
-in all marine fisheries	√
-in small pelagic fisheries	√
Interests in SCS Sulu-Celebes Sea Sustainable Fisheries Management (SCS-SFM) Project	- Reforms agreement on governance reforms for sustainable fisheries management - Demonstration of best fisheries management practices in critical sites of the SSME, particularly on the Outcome of increased landings and income and the Output - Demonstration Sites
Potential Conflicts/Threats to Involvement to SCS-SFM Project	None
Mitigation Strategy	-
Suggestions and Ideas in the Institutional Arrangements and Management of SCS-	

SFM	
-in all marine fisheries	√
-in small pelagic fisheries	√
Stakeholder	Research Center for Capture Fisheries (RCCF, Agency of Marine and Fisheries Research)
Mandate in terms of marine fisheries issues	To carry out strategic research in capture fisheries covering exploration and exploitation of fisheries resources, fishing gear and fisheries facilities in the marine and open waters based on technical policy of the Agency of Mar. and Fish. Research)
Involvement in SCS Marine Fisheries	<ul style="list-style-type: none"> - Conduct research on marine fisheries, biodiversity and conservation biology, particularly on the following topics: Fish stock assessments, Biodiversity of fish resources, marine fisheries conservation and enhancement - Conduct research on: Some biological and ecological aspects of economically important fish species, including their life history, population dynamics and population genetics.
-in all marine fisheries	√
-in small pelagic fisheries	√
Interests in SCS Sulu-Celebes Sea Sustainable Fisheries Management (SCS-SFM) Project	<ul style="list-style-type: none"> - Transboundary Diagnostic Analysis (TDA) – particularly on the Root Causes/Causal Chain Analysis (Outcome) and the complete TDA (Output) - Reforms agreement on governance reforms for sustainable fisheries management – particularly on research on the Strategic Action Program and the Integrated Local Coastal Management Plan (ICM) - Institutional Strengthening – particularly on the Technical Assistance (TA) for the effective implementation of the ICM model. - Demonstration of best fisheries management practices in critical sites of the SSME, particularly on the Outcome of increased landings and income and the Output - Demonstration Sites <p>The RCCF can conduct trainings under the TA and/or supervise monitoring under the ICM.</p>
Potential Conflicts/Threats to Involvement to SCS-SFM Project	
Mitigation Strategy	
Suggestions and Ideas in the Institutional Arrangements and Management of SCS-SFM	<ol style="list-style-type: none"> 1. formation of a tri-national research group to conduct research topics listed above and other required research topics necessary for fisheries management 2. formation of scientific committee to coordinate and monitor research and to report and disseminate research findings to the SSME Sub-Committee on Sustainable Fisheries and other stakeholders

-in all marine fisheries	√
-in small pelagic fisheries	√
Stakeholder	Provincial/District/City of Marine and Fisheries Services
Mandate in terms of marine fisheries issues	To carry out all aspects of marine affairs and fisheries department at the provincial/district / city level, including licensing (of fishing vessel < 30 GT) and other fisheries management aspects
Involvement in SCS Marine Fisheries	Fisheries statistical data collection and analysis for the respective areas.
-in all marine fisheries	√
-in small pelagic fisheries	√
Interests in SCS Sulu-Celebes Sea Sustainable Fisheries Management (SCS-SFM) Project	<ul style="list-style-type: none"> - Transboundary Diagnostic Analysis (TDA) – particularly on the Root Causes/Causal Chain Analysis (Outcome) and the complete TDA (Output) - Reforms agreement on governance reforms for sustainable fisheries management – particularly on research results on the Strategic Action Program and the Integrated Local Coastal Management Plan (ICM) - Institutional Strengthening – particularly on the Technical Assistance (TA) for the effective implementation of the ICM model. The RCCF can conduct trainings under the TA and/or supervise monitoring under the ICM. - Demonstration of best fisheries management practices in critical sites of the SSME, particularly on the Outcome of increased landings and income and the Output - Demonstration Sites in Tarakan
Potential Conflicts/Threats to Involvement to SCS-SFM Project	None
Mitigation Strategy	
Suggestions and Ideas in the Institutional Arrangements and Management of SCS-SFM	
-in all marine fisheries	√
-in small pelagic fisheries	√
Stakeholder	Universities: Borneo, Tarakan; Sam Ratulangi, Manado
Mandate in terms of marine fisheries issues	
Interests in Sulu-Celebes Sea	- Transboundary Diagnostic Analysis (TDA) – particularly on the Root Causes/Causal Chain Analysis

Sustainable Fisheries Management (SCS-SFM)	(Outcome) and the complete TDA (Output) - Reforms agreement on governance reforms for sustainable fisheries management – particularly on research on the Strategic Action Program and the Integrated Local Coastal Management Plan (ICM) - Institutional Strengthening – particularly on the Technical Assistance (TA) for the effective implementation of the ICM model. - Demonstration of best fisheries management practices in critical sites of the SSME, particularly on the Outcome of increased landings and income and the Output - Demonstration Sites in Tarakan
Involvement in SCS Marine Fisheries	None at present
Potential Conflicts/Threats to Involvement	None
Mitigation Strategy	Not applicable
Suggestions and Ideas in the Institutional Arrangements and Management of SCS-SFM	1. formation of a tri-national research group to conduct research topics listed above and other required research topics necessary for fisheries management 2. formation of scientific committee to coordinate and monitor research and to report and disseminate research findings to the SSME Sub-Committee on Sustainable Fisheries and other stakeholders

SIP TABLE 2: DETAILED CONSULTATIOS FOR MALAYSIA

Stakeholder Group: Academic and Research Institutions

Stakeholder	Borneo Marine Research Institute (BMRI), Universiti Malaysia Sabah
Mandate in terms of marine fisheries issues	<ul style="list-style-type: none"> - Conduct research on marine biodiversity and conservation biology, particularly on the following topics: Biodiversity assessments - Marine conservation - research on: aspects of biology and ecology of commercially important species; population genetics of commercially-important species; by-catch of small pelagic fishery; and ecological impacts of fisheries
Interests in Sulu-Celebes Sea Sustainable Fisheries	<ul style="list-style-type: none"> - Transboundary Diagnostic Analysis (TDA) – particularly on the Root Causes/Causal Chain Analysis (Outcome) and the complete TDA (Output)

Management (SCS-SFM)	<ul style="list-style-type: none"> - Institutional Strengthening – particularly on the Technical Assistance (TA) for the effective implementation of the ICM model. The BMRI can conduct trainings under the TA and/or supervise monitoring under the ICM. - Demonstration of best fisheries management practice in critical sites of the SCS, particularly on the Outcome of increased landings and income and the Output - Demonstration Sites; and the research related to establishing an Integrated Local Coastal Management Plan (ICM)
Involvement in SCS Marine Fisheries	
- in marine fisheries	
- in small pelagic fisheries	
Potential Conflicts/Threats to Involvement	None
Mitigation Strategy	Not applicable
Suggestions and Ideas in the Institutional Arrangements and Management of SCS-SFM	
- in marine fisheries	
- in small pelagic fisheries	

Stakeholder Group: Academic and Research Institutions

Stakeholder	School of Social Sciences and School of Economics, Universiti Malaysia Sabah
Mandate in terms of marine fisheries issues	- educate students in social sciences and economics
Interests in Sulu-Celebes Sea Sustainable Fisheries Management (SCS-SFM)	<ul style="list-style-type: none"> - Transboundary Diagnostic Analysis (TDA) – particularly on the Root Causes/Causal Chain Analysis (Outcome) and the complete TDA (Output) - Reforms agreement on governance reforms for sustainable fisheries management – particularly on research on the Strategic Action Program - Institutional Strengthening – particularly on the Technical Assistance (TA) for the effective implementation of the ICM model - Demonstration of best fisheries management practices in critical Sites of the SCS, particularly on the

	Outcome of increased landings and income and the Output - Demonstration Sites; and the preparation of the Integrated Local Coastal Management Plan (ICM)
Involvement in SCS Marine Fisheries	None at present
- in marine fisheries	
- in small pelagic fisheries	
Potential Conflicts/Threats to Involvement	None
Mitigation Strategy	Not applicable
Suggestions and Ideas in the Institutional Arrangements and Management of SCS-SFM	
- in marine fisheries	
- in small pelagic fisheries	

Stakeholder	Department of Fisheries, Sabah
Mandate in terms of marine fisheries issues	<p>To manage fisheries, according to the Fisheries Act of 1985 and develop fisheries according to national policies</p> <p>To apply the Code of Responsible Fisheries (FAO), particularly the monitoring of fishing effort and fisheries landings</p> <p>To adapt the Ecosystem Approach to Fisheries (FAO Guidelines, 2003), particularly the research requirements of fisheries management</p> <p>To conduct research for fisheries management</p>
Interests in SCS Sulu-Celebes Sea Sustainable Fisheries Management	<p>- Transboundary Diagnostic Analysis (TDA) – particularly on the Root Causes/Causal Chain Analysis (Outcome) and the complete TDA (Output)</p> <p>- Reforms agreement on governance reforms for sustainable fisheries management – particularly on research on the Strategic Action Program</p> <p>- Institutional Strengthening – particularly on the Technical Assistance (TA) for the effective implementation of the ICM model</p> <p>- Demonstration of best fisheries management practices in critical sites of the SCS, particularly on the Outcome</p>

	<p>of increased landings and income and the Output - Demonstration Sites; and the preparation of the Integrated Local Coastal Management Plan (ICM)</p> <ul style="list-style-type: none"> - management of small pelagic fisheries in Demonstrations Sites <ul style="list-style-type: none"> - research on: - aspects of biology and ecology of commercially important species; - population genetics of commercially-important species; - ecological impacts of fisheries
Involvement in SCS	
- in marine fisheries	- gathering and compiling of fisheries statistics; regulating effort
- in small pelagic fisheries	- gathering and compiling of fisheries statistics; regulating effort; profiling of the small pelagic fisheries
Potential Conflicts/Threats to Involvement	None
Mitigation Strategy	Not applicable
Suggestions and Ideas in the Institutional Arrangements and Management of SCS-SFM	
- in marine fisheries	<ol style="list-style-type: none"> 1. formation of a tri-national research group to conduct research topics listed above and other required research topics necessary for fisheries management 2. formation of scientific committee to coordinate and monitor research and to report and disseminate research findings to the SSME Sub-Committee on Sustainable Fisheries and other stakeholders
- in small pelagic fisheries	<ol style="list-style-type: none"> 1. formation of a tri-national research group to conduct research topics listed above and other required research topics necessary for fisheries management 2. formation of scientific committee to coordinate and monitor research and to report and disseminate research findings to the SSME Sub-Committee on Sustainable Fisheries and other stakeholders

Stakeholder	Southeast Asia Fisheries Development Centre (SEAFDEC) Marine Fishery Resources Development and Management Department
Mandate in terms of marine fisheries issues	<i>"..to focus on providing assistance to Member Countries for development and management of marine fishery resource in waters of the Southeast Asian region." http://seafdec.org.my</i>

Interests in SCS Sulu-Celebes Sea Sustainable Fisheries Management	- management of small pelagic fisheries in Demonstrations Sites <ul style="list-style-type: none"> - research on: - aspects of biology and ecology of commercially important species; - population genetic structure of commercially-important species; - ecological impacts of fisheries
Involvement in SCS	
- in marine fisheries	
- in small pelagic fisheries	
Potential Conflicts/Threats to Involvement	None
Mitigation Strategy	Not applicable
Suggestions and Ideas in the Institutional Arrangements and Management of SCS-SFM	
- in marine fisheries	
- in small pelagic fisheries	

Stakeholder	Malaysian Institute of Maritime Affairs
Mandate in terms of marine fisheries issues	<p><i>“...a) to mobilize marine expertise to support and assist the Government through the National Maritime Council or such agencies designated by the Government in its maritime policy planning and implementation including the advancement of socio-economic development and welfare for all in Malaysia;</i></p> <p><i>c) to ... provide the Government through the National Maritime Council or such other agencies designated by the Government with opinions, recommendations, and policy options on all maritime related issues....</i></p> <p><i>e) ...to act as a national focal centre on maritime affairs and maintain linkages with similar organizations worldwide (e.g., Indonesian Centre for the Law of the Sea, ...) ... and also with intergovernmental maritime organizations such as the International Maritime Organisation (IMO), International Maritime Bureau (IMB), Intergovernmental Oceanographic Commission (IOC), the United Nations Conference on Trade and Development (UNCTAD), ... Food and Agriculture Organisation of the United Nations (FAO), the United Nations Environment Programme (UNEP), the Economic and Social Commission of Asia and Pacific (ESCAP)....”</i> http://www.mima.gov.my</p>

Interests in SCS Sulu-Celebes Sea Sustainable Fisheries Management	<ul style="list-style-type: none"> - Reforms agreement on governance reforms for sustainable fisheries management – particularly on the Strategic Action Program and the collaborative agreements with relevant regional and sub-regional organizations - Institutional Strengthening – particularly on the Technical Assistance (TA) for the establishment of national inter-ministerial and inter-sectoral committees for the effective implementation of the actions programs
Involvement in SCS	None at the moment but has a great interest in the Sulu-Sulawesi Marine Ecoregion Conservation Plan
- in marine fisheries	
- small pelagic fisheries	
Potential Conflicts/Threats to Involvement	None
Mitigation Strategy	Not applicable
Suggestions and Ideas in the Institutional Arrangements and Management of SCS-SFM	
- in marine fisheries	
- small pelagic fisheries	

Stakeholder	Institute of Development Studies, Sabah
Mandate in terms of marine fisheries issues	<p><i>“...to promote and develop research-based decision-making process in government with regard to policy formulation and implementation, (by performing) the following functions :</i></p> <ul style="list-style-type: none"> • <i>Conducts problem-solving research on administrative and socio-economic development, and submits policy proposals to the government for consideration;</i> • <i>Analyses and evaluates policy proposals submitted by the public and presents recommendations to the State Government for possible implementation...”</i> http://www.ids.org.my
Interests in SCS Sulu-Celebes Sea Sustainable Fisheries Management	<ul style="list-style-type: none"> - Reforms agreement on governance reforms for sustainable fisheries management – particularly on the Strategic Action Program and the collaborative agreements with relevant regional and sub-regional organizations - Institutional Strengthening – particularly on the Technical Assistance (TA) for the establishment of national inter-ministerial and inter-sectoral committees for the effective implementation of the actions programs

	- Demonstration of best fisheries management practices in critical sites of the SCS, particularly on the Outcome of increased landings and income and the Output - Demonstration Sites
Involvement in SCS	
- in marine fisheries	
- in small pelagic fisheries	
Potential Conflicts/Threats to Involvement	
Mitigation Strategy	
Suggestions and Ideas in the Institutional Arrangements and Management of SCS-SFM	
- in marine fisheries	
- in small pelagic fisheries	

Stakeholder Group: Local Authorities

Stakeholder	District Office of Semporna
Mandate in terms of marine fisheries issues	To provide business licences to fisheries development activities To provide the support for the Sabah Development Corridor Blueprint for Semporna: Marine Industry Development
Interests in SCS Sulu-Celebes Sea Sustainable Fisheries Management	- Transboundary Diagnostic Analysis (TDA) – particularly on the Root Causes (Outcome) and the complete TDA (Output) - Reforms agreement on governance reforms for sustainable fisheries management – particularly on the Strategic Action Program and the Integrated Local Coastal Management Plan (ICM) - Institutional Strengthening – particularly on the Technical Assistance (TA) for the effective implementation of the ICM model - Demonstration of best fisheries management practices in critical sites of the SCS, particularly on the Outcome of increased landings and income and the Output - a Demonstration Site in Semporna
Potential Conflicts/Threats to	None

Involvement	
Involvement in SCS	
- in marine fisheries	Issuance of business licence to sell fish; developing infrastructure of fisheries (landing and marketing)
- in small pelagic fisheries	Issuance of business licence to sell fish; developing infrastructure of fisheries (landing and marketing)
Mitigation Strategy	Not applicable
Suggestions and Ideas in the Institutional Arrangements and Management of SCS-SFM	
- in marine fisheries	- formation of Semporna Priority Conservation Area, SSME or Demonstration Site Management Committee under the Fisheries Working Group for Sustainable Fisheries, Malaysia
- in small pelagic fisheries	

Stakeholder	District Office of Lahad Datu, Kunak, and Tawau
Mandate in terms of marine fisheries issues	To provide business licences to fisheries development activities
Interests in SCS Sulu-Celebes Sea Sustainable Fisheries Management	<p>Possible interests:</p> <ul style="list-style-type: none"> - Transboundary Diagnostic Analysis (TDA) – particularly on the Root Causes (Outcome) and the complete TDA (Output) - Reforms agreement on governance reforms for sustainable fisheries management – particularly on the Strategic Action Program and the Integrated Local Coastal Management Plan (ICM) - Institutional Strengthening – particularly on the Technical Assistance (TA) for the effective implementation of the ICM model - Demonstration of best fisheries management practices in critical sites of the SCS, particularly on the Outcome of increased landings and income and the Output - a Demonstration Site in the Southeast Fishing Zone, based in Semporna
Involvement in SCS Marine Fisheries	
- in marine fisheries	
- in small pelagic fisheries	

Potential Conflicts/Threats to Involvement	None
Mitigation Strategy	Not applicable
Suggestions and Ideas in the Institutional Arrangements and Management of SCS-SFM	
- in marine fisheries	
- in small pelagic fisheries	

Stakeholder Group: Government Ministries and Departments

Stakeholder	Ministry of Science, Technology, and Innovation, National Oceanography Directorate
Stakeholder	District Offices of Kudat, Sandakan, Kota Marudu
Mandate in terms of marine fisheries issues	To provide business licences to fisheries development activities
Interests in SCS Sulu-Celebes Sea Sustainable Fisheries Management	<p>Potential interests:</p> <ul style="list-style-type: none"> - Transboundary Diagnostic Analysis (TDA) – particularly on the Root Causes (Outcome) and the complete TDA (Output) - Reforms agreement on governance reforms for sustainable fisheries management – particularly on the Strategic Action Program and the Integrated Local Coastal Management Plan (ICM) - Institutional Strengthening – particularly on the Technical Assistance (TA) for the effective implementation of the ICM model - Demonstration of best fisheries management practices in critical sites of the SCS, particularly on the Outcome of increased landings and income and the Output - a Replication Site in the Northeast Fishing Zone -
Involvement in SCS	None at the moment
- in marine fisheries	
- in small pelagic fisheries	
Potential Conflicts/Threats to Involvement	None
Mitigation Strategy	Not applicable
Suggestions and Ideas in the Institutional Arrangements and Management of SCS-SFM	
- in marine fisheries	
- in small pelagic fisheries	
Mandate in terms of marine	- research, development, commercialization, and competence for marine resources management

fisheries issues	<i>“Stewardship of oceanography and marine science through research and development, commercialization, competent human capital development towards sustainable marine resource management in accordance with the national aspiration.” http://www.mosti.gov.my</i>
Interests in SCS Sulu-Celebes Sea Sustainable Fisheries Management	<ul style="list-style-type: none"> - Transboundary Diagnostic Analysis (TDA) – particularly on the Root Causes/Causal Chain Analysis (Outcome) and the complete TDA (Output) - Reforms agreement on governance reforms for sustainable fisheries management – particularly on the Strategic Action Program and development of collaborative agreements with relevant sub-regional and regional organizations - Institutional Strengthening – particularly on the Technical Assistance (TA) to ensure Outcome and Outputs (specially in the membership to the inter-ministerial committee) - Demonstration of best fisheries management practices in critical sites of the SCS, particularly on the productivity of the SCS that underlie landings
Involvement in SCS	- preparing a coastal ecological and socio-economic profiling of eastern coast of Sabah, overlapping with the 2 fishing zones
- in marine fisheries	
- in small pelagic fisheries	
Potential Conflicts/Threats to Involvement	None
Mitigation Strategy	Not applicable
Suggestions and Ideas in the Institutional Arrangements and Management of SCS-SFM	
- in marine fisheries	
- in small pelagic fisheries	

Stakeholder	Brunei-Indonesia-Malaysia-Philippines East Asia Growth Area (BIMP-EAGA), Economic Planning Unit, Sabah
Mandate in terms of marine fisheries issues	<i>“Its immediate goal is to increase trade, investments and tourism in the subregion by facilitating the (i) freer movement of people, goods and services; (ii) development of vital infrastructure in the subregion; and (iii)</i>

	<i>coordination of the management of ecosystems and common resources to ensure sustainable development.”</i> http://www.bimp-eaga.org
Interests in SCS Sulu-Celebes Sea Sustainable Fisheries Management	<ul style="list-style-type: none"> - Transboundary Diagnostic Analysis (TDA) – particularly on the Root Causes/Causal Chain Analysis (Outcome) and the complete TDA (Output) - Reforms agreement on governance reforms for sustainable fisheries management – particularly on the Strategic Action Program and development of collaborative agreements with relevant sub-regional and regional organizations - Institutional Strengthening – particularly on the Technical Assistance (TA) to ensure Outcome and Outputs (specially in the membership to the inter-ministerial committee) - Demonstration of best fisheries management practices in critical sites of the SCS, particularly on the Outcome of improved landings and income in the Demonstrations Sites (Outputs)
Involvement in SCS	
- in marine fisheries	Implements the Sustainable Fisheries Action Plan of the Tri-national Committee of the Sulu-Sulawesi Marine Ecoregion under the Environment Cluster
- in small pelagic fisheries	
Potential Conflicts/Threats to Involvement	None
Mitigation Strategy	Not applicable
Suggestions and Ideas in the Institutional Arrangements and Management of SCS-SFM	
- in marine fisheries	
- in small pelagic fisheries	

Stakeholder	Ministry of Tourism, Culture, and Environment, Sabah, Environment Protection Department
Mandate in terms of marine fisheries issues	<i>“...Integrate environmental factors into the planning and implementation of development activities and exploitation of natural resources; Regulate development activities and the exploitation of natural resources that cause environmental pollution and degradation or have the potential to cause significant residual impact on the environment...”</i>

	<i>(http://www.sabah.gov.my/jpas)</i>
Interests in SCS Sulu-Celebes Sea Sustainable Fisheries Management	<ul style="list-style-type: none"> - Transboundary Diagnostic Analysis (TDA) – particularly on the Root Causes/Causal Chain Analysis (Outcome) and the complete TDA (Output) - Reforms agreement on governance reforms for sustainable fisheries management – particularly on the Strategic Action Program - Institutional Strengthening – particularly on the Technical Assistance (TA) to ensure Outcome and Outputs (specially in the membership to the inter-ministerial committee) for the effective implementation of the SAP and the ICM - Demonstration Sites - the preparation of local integrated coastal management (ICM)
Involvement in SCS Marine Fisheries	
- in marine fisheries	
- in small pelagic fisheries	
Potential Conflicts/Threats to Involvement	None
Mitigation Strategy	Not applicable
Suggestions and Ideas in the Institutional Arrangements and Management of SCS-SFM	
- in marine fisheries	
- in small pelagic fisheries	

Stakeholder Group: Non-Governmental Organizations

Stakeholder	World Wide Fund for Nature, Malaysia
Mandate in terms of marine fisheries issues	<i>To assist the government of Malaysia in conservation of biodiversity, the environment, and natural resources</i>
Interests in SCS Sulu-Celebes Sea Sustainable Fisheries Management	<ul style="list-style-type: none"> - Transboundary Diagnostic Analysis (TDA) – particularly on the Root Causes/Causal Chain Analysis (Outcome) and the complete TDA (Output) - Institutional Strengthening – particularly on the Technical Assistance (TA) to ensure effective implementation of the ICM Model

	<ul style="list-style-type: none"> - Replication Site in the Northeast Fishing Zone, where it is facilitating the establishment of the Tun Mustapha Marine Park (a Large Marine Managed Area) - Demonstration Site in the Southeast Fishing Zone, where it is facilitating the implementation of the Semporna Priority Conservation Area Vision for conservation
Involvement in SCS	
- in marine fisheries	- establishing Marine Protected Areas for biodiversity conservation and fisheries management
- in small pelagic fisheries	
Potential Conflicts/Threats to Involvement	
Mitigation Strategy	
Suggestions and Ideas in the Institutional Arrangements and Management of SCS-SFM	
- in marine fisheries	Strengthening of the SSME Sub-Committee on Sustainable Fisheries (under the SSME Conservation Plan of WWF-Malaysia)
- in small pelagic fisheries	

Stakeholder Group: Industry/Private Sector

Stakeholder	Fishing Industry (e.g., Widegrowth Marine Products, Sdn. Bhd.,), Fisheries Development Cooperative Sabah
Mandate in terms of marine fisheries issues	- development of fisheries; preparation of fisheries management plan, in accordance with the Fisheries Act 1985; reporting fisheries statistics to the Department of Fisheries
Interests in SCS Sulu-Celebes Sea Sustainable Fisheries Management	- Transboundary Diagnostic Analysis (TDA) – particularly on the Root Causes (Outcome) and the complete TDA (Output) - Reforms agreement on governance reforms for sustainable fisheries management – particularly on the Strategic Action Program - Institutional Strengthening – particularly on the Technical Assistance (TA) for the effective implementation of the ICM model - Demonstration of best fisheries management practices in critical sites of the SCS, particularly on the Outcome of increased landings and income and the Output - a Demonstration Site in Semporna and Replication Site in Sandakan; and the Integrated Local Coastal Management Plan (ICM)
Involvement in SCS Marine Fisheries	
- in marine fisheries	- trawling; collaboration in conservation efforts in Kudat and Sandakan
- in small pelagic fisheries	- purse-seining
Potential Conflicts/Threats to Involvement	- strict enforcement of fisheries regulations, particularly on mesh sizes and lighting as Fish Aggregating Device
Mitigation Strategy	- information, education, and communication campaign; consultation and collaboration in establishing Demonstration and Replication Site and in developing fisheries management plan
Suggestions and Ideas in the Institutional Arrangements and Management of SCS-SFM	
- in marine fisheries	- facilitation of access to fishing grounds of Indonesia and the Philippines
- in small pelagic fisheries	- facilitation of access to fishing grounds of Indonesia and the Philippines
Stakeholder	Sabah Fish Marketing <i>Sendirian Berhad (Incorporated)</i> (SAFMA)

Mandate in terms of marine fisheries issues	- development of fisheries and markets
Interests in SCS Sulu-Celebes Sea Sustainable Fisheries Management	<ul style="list-style-type: none"> - Transboundary Diagnostic Analysis (TDA) – particularly on the Root Causes (Outcome) and the complete TDA (Output) - Reforms agreement on governance reforms for sustainable fisheries management – particularly on the Strategic Action Program and the Integrated Local Coastal Management Plan (ICM) - Institutional Strengthening – particularly on the Technical Assistance (TA) for the effective implementation of the ICM model - Demonstration of best fisheries management practices in critical sites of the SCS, particularly on the Outcome of increased landings and income
Involvement in SCS	
- in marine fisheries	- marketing and exporting fishery products
- in small pelagic fisheries	- marketing and exporting fishery products
Potential Conflicts/Threats to Involvement	
Mitigation Strategy	
Suggestions and Ideas in the Institutional Arrangements and Management of SCS-SFM	
- in marine fisheries	
- in small pelagic fisheries	

SIP TABLE 3: DETAILED CONSULTATIONS FOR THE PHILIPPINES

Stakeholder Group: Academic and Research Institutions

Stakeholder	Zamboanga State College of Marine Sciences and Technology (ZSCMST)
Mandate in terms of marine fisheries issues	<ul style="list-style-type: none"> - Undertaking of upstream, midstream and downstream research and development works in fisheries, marine diversity, marine science and technology, food science and technology and maritime technology; - Development of competent researchers committed to the development and transfer of globally competitive technologies; - Contribution to the increase in production of fish and other fishery products that would provide solutions to problems related to production and post harvest technology; - Leadership in the initiatives for the rational exploitation of the Region IX's fisheries and marine resources; - Conduct of socio-economic studies in the region's rural fishing villages, fishpond/ aquaculture and processing centers for the purpose of discovering ways and means of accelerating the improvement of the quality of the people's lives in the Primary Service Area (PSA)
Involvement in SCS Marine Fisheries	<ul style="list-style-type: none"> - None at present, but before, they have conducted various research studies in marine fisheries of Zamboanga City and surrounding waters
Interests in Sulu-Celebes Sea Sustainable Fisheries Management (SCS-SFM)	<ul style="list-style-type: none"> - Participation in the research studies and data collection activities of the Project;
Potential Conflicts/Threats to Involvement	<ul style="list-style-type: none"> - With regards to research work, the absence of standardization of methodologies may affect their participation in the Project. - No clear delineation of the ownership of the data collected—the project or the organization conducting the research activity of the project. This is a concern because it will affect the organization in the publication of other related studies using the data collected from the project. - Lack of funding for fisheries research activities
Mitigation Strategy	<ul style="list-style-type: none"> - Standardization of research methodologies; - The ownership of the data collected from the research activities of the project should be shared by the Project; for example, the data will be co-shared by the Project and the organization that will undertake a research study, so that the latter will be able to publish related studies using the data collected through the auspices of the Project. This co-sharing of the data can be included and stipulated in the MOA or contract between the Project and the research organization. - The budget any research study to be conducted by the State College for the Project will be included in the research proposal.
Suggestions and Ideas in the Institutional Arrangements	<ul style="list-style-type: none"> • Some kind of MOA or MOU between BFAR and relevant agencies for better understanding and management of marine fisheries resources; to be specified in the MOA or MOU is the nature of participation of the

and Management of SCS-SFM	different agencies as well as their specific roles with regards to small pelagic fisheries in particular and marine fisheries in general
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Stakeholder Group: Local Authorities

Stakeholder	Zamboanga City local government unit (LGU)
Mandate in terms of marine fisheries issues	<ul style="list-style-type: none"> - Attainment of food security by ensuring sustainable development, management, protection and conservation of fishery aquatic resources in the City of Zamboanga. Most of these resources are utilized as commercial species by the canning factories and fish drying plants in the city.
Involvement in SCS Marine Fisheries	<ul style="list-style-type: none"> - Provision of support to fisherfolks who are relying specifically on the marine fish resources of Zamboanga City for their livelihood - The city has been dubbed as “Sardine Capital of the Philippines” where approximately 90% of the Philippine sardine industry is based. It hosts 11 sardine canneries and is home port of the huge sardine fishing fleet of the Southern Deep Sea Fishing Association, Inc. (Sophil) which is composed of about 465 purse seiners and support vessels. It also hosts two large areas of dried sardine farms which supply dried fish products all over the country. - Fisheries management of municipal/city waters of Zamboanga City; monitoring and data collection of the municipal fisheries (up to 15 kms from shore)
Interests in Sulu-Celebes Sea Sustainable Fisheries Management (SCS-SFM)	<ul style="list-style-type: none"> - Involvement in the strategic planning for the implementation of the project - The Sulu Sea waters belonging to Zamboanga City should be determined by NAMRIA survey using Global Positioning System (GPS). - Active participation in the formulation and implementation of fisheries management policies because these affect various sectors of the fishing industry (boat owner and crew, and cannery workers) - Any fisheries management policy based on BFAR’s Fisheries Administrative Order (FAO) should be enacted locally through a City Ordinance to be crafted by the City Council - Management of municipal fisheries as this is the mandate of the LGU
Potential Conflicts/Threats to Involvement	<ul style="list-style-type: none"> - Funding constraints - Difficulty in monitoring of fish catch due to absence of LGU-managed fish ports; there are many private fish landing areas in the city. - If the LGU is not informed of the research findings and recommendations for specific fisheries ordinances to be crafted, it may not be able to extend the needed support, especially those ordinances that will have big impact on the city’s fisheries stakeholders.

Mitigation Strategy	<ul style="list-style-type: none"> - Each participating agency or organization should allocate its funding contribution (in cash or in kind) as may be needed in the project. - Establishment of a Zamboanga City public fish port for effective fish health examination, fish catch monitoring, data gathering & regulatory functions, among others. - The City local government, through the City Mayor and the City Council, should always be informed of the Project's research findings and recommendations for specific fisheries ordinances that need to be formulated so that appropriate actions can be undertaken by the City government.
Suggestions and Ideas in the Institutional Arrangements and Management of SCS-SFM	<ul style="list-style-type: none"> • Needed is a relevant written order from the national government, directing the officers of concerned national offices and LGUs to actively support the management of marine fisheries management, and stipulating their respective roles and functions

Stakeholder Group: Government Ministries and Departments

Stakeholder	BFAR-IX Regional Office, Zamboanga City
Mandate in terms of marine fisheries issues	- Sustainable utilization, conservation and management of marine fisheries in Region IX (Western Mindanao)
Involvement in SCS Marine Fisheries	- Sustainable conservation and management of small pelagic fisheries of Region IX; monitoring of the big sardine industry of the Zamboanga Peninsula; also involve in the conservation of management of large pelagics such as tuna
Interests in Sulu-Celebes Sea Sustainable Fisheries Management (SCS-SFM)	- Preservation and production of fish in the region; interested in the attainment of MSY for the region; direct participation in the project in terms of extension of technical support; rationalization of fishing efforts in the region to attain MSY
Potential Conflicts/Threats to Involvement	- Lack of funding to support these kinds of Projects
Mitigation Strategy	<ul style="list-style-type: none"> - Provision of some funds from the Project for the support activities to be extended by BFAR-9 to the project - Inclusion of additional annual budget allocation for BFAR-9 from the national government for its support activities to the Project
Suggestions and Ideas in the Institutional Arrangements and Management of SCS-SFM	<ul style="list-style-type: none"> • There should be regular consultations to be conducted among the concerned stakeholders.

Stakeholder	National Stock Assessment Project (NSAP) – IX of BFAR/NFRDI, Zamboanga City
Mandate in terms of marine fisheries issues	<ul style="list-style-type: none"> - Institutionalization of fisheries stock assessment in Region IX so that continuous and reliable time series data will be available for the development of sound fisheries management strategies in the Western Mindanao region
Involvement in SCS Marine Fisheries	<ul style="list-style-type: none"> - Continuous conduct of fisheries stock assessment, implementation of regulatory activities such as mesh-size regulations, proposal on the declaration of close season for the sardine fishery in Region IX - Participation in the tuna research of BFAR/NFRDI; - Monitoring of all fish landings in Region IX for its stock assessment studies, although their focus is on sardines
Interests in Sulu-Celebes Sea Sustainable Fisheries Management (SCS-SFM)	<ul style="list-style-type: none"> - Interested in sustainable utilization, management and conservation of small pelagic; any research and development efforts; implementation of best fisheries management practices; sexual maturity studies on sardines and other small pelagic species of Region IX
Potential Conflicts/Threats to Involvement	<ul style="list-style-type: none"> - The lead agency for the implementation of the Project, if not appropriately arranged, might result to overlapping of functions. - Lack of funds for the NSAP-9 <ul style="list-style-type: none"> • Lack of technical personnel • Lack of research equipment such as computers and laboratory paraphernalia
Mitigation Strategy	<ul style="list-style-type: none"> - At the inception of the Project, identify the lead agency and properly inform the stakeholders - Defining the terms of reference (TORs) and roles of the participants and stakeholders, including logistics responsibilities - Setting up of a Project Management Unit (PMU) • Provision of some Project funds to NSAP-9 to support additional fisheries enumerators, technical personnel and necessary research equipment
Suggestions and Ideas in the Institutional Arrangements and Management of SCS-SFM	<ul style="list-style-type: none"> • There should be an institutional Task Force or Technical Working Group (TWG) in the Philippines for the management of SCS small pelagic fisheries. • Coming up with unified regional strategies is also a good idea.

Stakeholder	Mindanao Economic Development Council (MEDCo)
Mandate in terms of marine fisheries issues	<ul style="list-style-type: none"> - Global competitiveness of the Mindanao agri-fishery sector, among others - Promotion and integration of the sustainable socio-economic development in Mindanao through the active participation of all Mindanaoans
Involvement in SCS Marine Fisheries	<ul style="list-style-type: none"> - Acts as the Philippine Secretariat to the Brunei Darussalam Indonesia Malaysia the Philippines – East ASEAN Growth Area (BIMP-EAGA) economic cooperation which has four Growth Clusters, among which is the Natural Resources Development (NRD) Cluster which also comprises four Working Groups (WGs), among which is the WG on Fisheries Cooperation - Initiated the integration of the Sulu-Sulawesi Marine Ecoregion (SSME) Program into the BIMP-EAGA in close coordination with partners - Participation in the CTI - Extension of technical assistance in the preparation of the concept note for the SCS-SFMP
Interests in Sulu-Celebes Sea Sustainable Fisheries Management (SCS-SFM)	<ul style="list-style-type: none"> - Component 1: Demonstration of best fisheries management practices in critical sites of the SCS, particularly on the Outcome of increased landings and income and the Output - Demonstration Sites - Component 2: Transboundary Diagnostic Analysis (TDA) – particularly on the Root Causes/Causal Chain Analysis (Outcome) and the complete TDA (Output) - Component 3: Reforms agreement on governance reforms for sustainable fisheries management – particularly on research on the Strategic Action Program and the Integrated Local Coastal Management Plan (ICM) - Component 4: Institutional Strengthening – particularly on the Technical Assistance (TA) for the effective implementation of the ICM model.
Potential Conflicts/Threats to Involvement	<ul style="list-style-type: none"> - Lack of funds to participate in stakeholder meetings for the SCS-SFMP
Mitigation Strategy	<ul style="list-style-type: none"> - Inclusion in the annual budget call preparations of additional budget allocation for participation in the various activities of the SCS-SFMP
Suggestions and Ideas in the Institutional Arrangements and Management of SCS-SFM	<ul style="list-style-type: none"> - Formation of a tri-national research group to conduct research topics necessary for SCS small pelagic fisheries management - Formation of a scientific committee to coordinate and monitor researches, and to report and disseminate research findings to the SSME Sub-Committee on Sustainable Fisheries and other stakeholders

Stakeholder Group: Industry/Private Sector

Stakeholder	Permex Producer and Exporter Corporation (Zamboanga City)
Mandate in terms of marine fisheries issues	- Production and sale of canned marine products such as sardines and tuna
Involvement in SCS Marine Fisheries	<ul style="list-style-type: none"> • Canning of sardine fish which are caught in Western Mindanao along the Sulu Sea; also canning of mackerels which has become occasional due to dwindling catches in the area
Interests in Sulu-Celebes Sea Sustainable Fisheries Management (SCS-SFM)	<ul style="list-style-type: none"> • Efforts for the sustainability of small pelagics in the region, especially sardines because it is for the interest of the whole fisheries industry; sharing of information
Potential Conflicts/Threats to Involvement	<ul style="list-style-type: none"> • Negative perceptions from the other members of the private sector regarding fishery management findings and measures that may result from the Projects activities; • With regards to the application of best fisheries management practices such as the Close Season, other industry players might get skeptical and will not undertake them.
Mitigation Strategy	<ul style="list-style-type: none"> • Active IEC campaign among the members of the fisheries private sector for better understanding of proper fisheries management for the sustainability of the resources that will supply the raw materials for the sardine business of the City • Explain well, in layman's terms, to the private sector the appropriate activities and benefits of fisheries management so that they can better appreciate its importance to the City sardine industry and in order for them to follow best fisheries management practices for the sustainable development of the industry; • Quick feedback to the industry players on the results of the relevant research studies conducted under the Project (fast information dissemination) • With regards to the possible practice of Close Season, the fishing fleet can probably schedule their annual drydocking and repairs on the days of the Closed Season. • Involve other government agencies in relevant activities of the Project such as the DOLE which has livelihood programs that can be extended to fisherfolks
Suggestions and Ideas in the Institutional Arrangements and Management of SCS-SFM	<ul style="list-style-type: none"> • There should be a structural framework of collaboration for small pelagic fisheries management among the IMP.

Stakeholder	Tugbungan Bularan Association (Zamboanga City)
Mandate in terms of marine	- Production and sale of dried sardines, roundscads, mackerels and other small pelagic fish

fisheries issues	
Involvement in SCS Marine Fisheries	<ul style="list-style-type: none"> Getting raw fish supplies from fishing companies and drying them for commercial trading in Zamboanga City and to other parts of the Philippines (Visayas and Luzon); fishes being processed are sardines, roundscads, mackerels and big-eye scad
Interests in Sulu-Celebes Sea Sustainable Fisheries Management (SCS-SFM)	<ul style="list-style-type: none"> Support in the data gathering and sharing of information
Potential Conflicts/Threats to Involvement	None
Mitigation Strategy	Not applicable
Suggestions and Ideas in the Institutional Arrangements and Management of SCS-SFM	

Stakeholder Group: Parastatal

Stakeholder	Regional Agriculture and Fishery Council (RAFC) – IX
Mandate in terms of marine fisheries issues	<ul style="list-style-type: none"> Provision of advisory services to the Department of Agriculture on matters pertaining to agriculture and fisheries Advocacy for the sustainable utilization and management of the region's marine resources
Involvement in SCS Marine Fisheries	<ul style="list-style-type: none"> Provision of advisory services to the Secretary of the Department of Agriculture Advocacy to the national government and other concerned stakeholders for the sustainable conservation and management of fishery resources in Region IX
Interests in Sulu-Celebes Sea Sustainable Fisheries Management (SCS-SFM)	<ul style="list-style-type: none"> Taking care of the interest of the fisheries stakeholders by making recommendations to the LGUs and national government agencies The organization can help the project in its networking and advocacy activities.
Potential Conflicts/Threats to Involvement	None
Mitigation Strategy	Not applicable

<p>Suggestions and Ideas in the Institutional Arrangements and Management of SCS-SFM</p>	
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SIP TABLE 4: PROPOSED WORKPLAN FOR STAKEHOLDER INVOLVEMENT

Activity	Year 1	Year 2	Year 3	Year 4
A. Regional and national activities related to TDA and SAP				
Working groups established in each country and for the entire region with the projected outcome of providing input to TDA and SAP	X	X		
National and regional workshops to plan for and discuss results from TDA- and SAP-related activities	X	X	X	
National and regional meetings to discuss the progress of SAP implementation				
B. General activities				
Establish stakeholder contact lists for each country, including group e-mail lists (list serves)	X			
Process update newsletter sent to all stakeholders	X	X	X	X
Sector-specific group e-mail lists (list serves) created at the national and regional levels to facilitate communication with and among stakeholders. The list is distributed to all stakeholders.	X	X		
Communications and public awareness strategy for SSME and project	X			
Actions outlined in communications and public awareness strategy are implemented.		X	X	X
Existing trainings and capacity building opportunities within stakeholder institutions highlighted in process update newsletter		X	X	X
Need for sustainable funding communicated to stakeholders and support solicited	X	X		
Lessons learned/best practices meetings held regionally for different sectors		X	X	X
Elements of marine management, including public discussion forum, added to project website and other tools	X	X	X	X
Training sessions on web-based sharing tools launched in coastal communities and national centers		X	X	X
List of local and national stakeholders interested in information about the project compiled and stakeholders are invited to training sessions	X			
Public discussion forums in the English language and local languages are established.	X			
Funds for encouraging the participation in international meetings of project stakeholders are established.		X	X	X
Detailed baseline stakeholder participation level assessment	X			
Regular stakeholder meetings in-country and in sites	X	X	X	X

SIP TABLE 5: PROPOSED BUDGET FOR STAKEHOLDER INVOLVEMENT

Activity	Frequency	Approximate Cost Per Unit (\$)	Estimated Total Cost (\$)
TDA-related Consultations/Workshops (regional and national)	Occasional (from 1 st to 2 nd year)	88,800 for entire process	88,800
SAP-related Consultations/Workshops (regional and national)	Occasional (from 2 nd to 4 th year)	100,300 for entire process and update	100,300
Site-based Consultations	Regular	9,600 per site for entire period	28,800
Total Cost			217,900

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Regional: Indonesia, Malaysia and Philippines

UNDAF Outcome(s)/Indicator(s):

By 2009, increased capacity of the stakeholders to protect/enhance the quality of the environment and sustainably manage natural resources.

Expected Outcome(s)/Indicator (s):

Key stakeholders are better able to manage environment and natural resources, develop and use sustainable energy sources, cope with the impacts of environmental emergencies and maintain sustainable development

Number of inconsistent environment and natural resources policies harmonized/standardized

Implementing partner:

*United Nations Development Programme
United Nations Office for Project Services*

Other Partners:

*Department of Agriculture- Bureau of Fisheries
and Aquatic Resources (DA-BFAR, Philippines)
Ministry of Marine Affairs and Fisheries (MOMAF, Indonesia)*

Programme Period: 2009-2013	Total budget: 6,120,000
Programme Component: _____	Allocated resources :
Project Title: PIMS 4063 IW FSP Sulu-Celebes Sea Sustainable Fisheries Management	• GEF 2,890,000
Project ID: 00072140	• Co-financing
Project Duration: 4 years	- Governments (cash/in-kind): 3,000,000
Management Arrangement: UNOPS/WCOFC	- UNDP (in-kind): 90,000
	- NGO (cash) 140,000

Annex 1

The SSME Ecoregion Conservation Plan (ECP)

Background of the ECP

The Sulu-Sulawesi Marine Ecoregion (SSME) is a regional marine ecosystem surrounded by Indonesia, Malaysia and the Philippines. It is one of the largest centers of marine biodiversity in the world. Over time, however, the deterioration of environmental conditions in the SSME has affected the provision of ecosystem services, in fisheries, livelihood, and protection. Thus, the SSME Conservation Program was launched in 1999 to promote conservation and sustainable use of marine resources in the ecoregion. One of the important undertakings under the SSME Conservation program was the development of a stakeholders' ECP.

The development of the ECP commenced with the formation of a common 50-year vision for biodiversity and sustainable productivity in the SSME in 2001 by more than 70 representatives from the three SSME countries including marine scientists, socioeconomic experts, resource managers and policy makers. This vision is as follows⁹⁹

- A marine ecoregion that remains to be globally unique and centre of diversity with vibrant ecological integrity including all species assemblages, communities, habitats and ecological processes;
- A highly productive ecoregion that sustainably and equitably provides for the socioeconomic and cultural needs of the human communities dependent on it; and
- An ecoregion where biodiversity and productivity are sustained through the generations by participatory and collaborative management across all political and cultural boundaries.

From the vision, the ECP was formulated through a participatory process which included 12 workshops across the three countries and participated in by 153 stakeholder organizations and their representatives from the local and national levels. Furthermore, a noted feature of the plan was the shift from a non-government organization (NGO)-facilitated to a government-led planning process.

The ECP consists of an ecoregion-level action plan and national plans for the three countries – Indonesia, Malaysia and the Philippines. These national plans contain national actions and local actions to be undertaken by the countries in pursuance of the ECP. The ECP has ten objectives that are aligned with the national priorities of the countries and their commitments to common relevant international instruments and conventions.

Specifically, the plan aims to:

- Establish management strategies and coordinated institutions for effective ecoregional conservation;
- Establish a functional integrated network of priority conservation areas to ensure ecological integrity; and

⁹⁹ Miclat, F. B. and R. B. Trono. 2008. One vision, one plan, common resources, joint management. p. 4-9. *In* Tropical Coasts, Volume 12 Number 1, July 2008 Issue.

- Develop sustainable livelihood systems that support marine and coastal conservation areas across the ecoregion;
- Shape economic development compatible with biodiversity conservation;
- Enhance understanding of biodiversity resources and factors affecting them to form a basis for management decisions;
- Develop communication, education and outreach programmes and strategies to motivate people to take conservation action;
- Develop sustainable financing mechanisms to support the cost of conservation and resource management;
- Build and enhance the capacity of stakeholders to effectively manage the conservation of the SSME;
- Implement coordinated protection of threatened marine species to ensure maintenance of viable population and protection of critical habitats; and
- Improve coastal, oceanic and other types of fishery resource conditions and management by developing a framework strategy, institutions and appropriate interventions.

The Tri-National Committee on the SSME, which is composed of representatives of the designated national authorities of the Republic of Indonesia, Malaysia and the Republic of the Philippines, was established in March 1, 2006 and mandated to coordinate and harmonize the implementation of the ECP and review, update and revise it when necessary. Under the Tri-National Committee are three sub-committees including the Sub-committee on the Endangered, Charismatic and Migratory Species; Subcommittee on Marine Protected Areas (MPAs) and Networks; and Subcommittee on Sustainable Fisheries.

Respectively, the abovementioned committees aim to conserve and sustainably manage endangered, charismatic and migratory species; enhance biodiversity through the establishment and effective management of MPA and Networks; and promote the sustainable development of the fisheries sector in the SCS. The current lead country and agency of the Subcommittee on the Endangered, Charismatic and Migratory Species is Indonesia and its Ministry of Marine Affairs and Fisheries (MMAF). The Philippines and its Department of Environment and Natural Resources (DENR) lead the Sub-committee on Marine Protected Areas and Networks while Malaysia and its Department of Fisheries (DOF), Ministry of Agriculture and Food Industries (MAFI) lead the Sub-committee on Sustainable Fisheries.

The specific mandates of the Sub-Committee on Sustainable Fisheries, where the Sulu-Celebes Seas-Sustainable Fisheries Management Project (SCS-SFM) falls under, are to address management and technical issues that relate to sustainable fisheries, aquaculture, living aquatic resources exploitation, trade and livelihood systems in the region and to provide technical advice and recommendations for policy development and implementation. The workplan of the sub-committee includes activities on a) regeneration, rehabilitation and restoration of degraded coastal lowlands; b) illegal, unregulated and unreported (IUU) fishing; c) awareness programmes; d) sustainable aquaculture; e) fisheries research; f) trade in live reef fishes and marine organisms; g) marine turtle and seaweed farms interactions; h) funding; i) collaborative fisheries management for shared stocks in the SSME; k) capacity building for stakeholders; and l) fisheries by-catch.

Progress of ECP Implementation

Since its formation in 2006, the Tri-National Committee has convened three times, first in East Kalimantan, Indonesia, then in Sabah, Malaysia and Makati City, Philippines. The major

outcomes of these meetings in the pursuance of the implementation of the ECP and the conservation and sustainable development in the SSME are the following: a) The finalization of the terms of reference of the Tri-National Committee; b) The establishment of three technical/scientific subcommittees to respond to major issues in the SSME; and c) The organization of the work program of the sub-committees.

During the Third National Committee Meeting held in Makati City, Philippines on June 13-14, 2008, the standing chair of the Tri-National Committee reported that during the first half-term of his chairmanship, the Malaysian SSME Tri-National Committee Secretariat was established under the Department of Fisheries, Sabah, under the umbrella of the Ministry of Agriculture and Food Industry, Sabah, Malaysia. The secretariat has played significant roles in facilitating, supporting and managing day to day works and duties of the Chair. It has also, at a certain level, functions as resource center and facilitated the working execution of the Sub-Committees and Task Group of Directory Experts of the SSME.

During the first half of the tenureship of the Chair, the Secretariat has undertaken the activities as follows:

- a. Compiling, printing and distributing the completed Minutes of the Meeting of The Second Tri-National Committee on the Sulu-Sulawesi Marine Ecoregion Programme;
- b. Communicating to the three countries, on behalf of the Chair of Committee, to facilitate the establishment and meetings of the Sub Committees and Task Group;
- c. Coordinating and consulting the Second meetings of The Sub Committee on Sustainable Fisheries; Sub Committee on Endangered, Charismatic and Migratory Species; and the Sub Committee on Marine Protected Areas (MPAs) and Networks;
- d. Collecting and collating results of the Sub Committee meetings for the dissemination to all country members;
- e. Coordination and consultations with The Philippines in preparing the Meeting of The Second Tri-National Committee on the Sulu-Sulawesi Marine Ecoregion Programme; and
- f. Conducted series of Malaysian Stakeholders Meeting to facilitate collaborative management of the programme in Malaysia; indirectly creating public awareness through conducting various talk and briefings on SSME programme to various Malaysian stakeholders.

During the Second Tri-National Committee Meeting held in Sabah, Malaysia on April 19-21, 2007, the Sub-Committee on Sustainable Fisheries proposed the following workplan which includes activities than have bearings on the conservation and sustainable management of small pelagic fishery resources (Annex Box 1):

Annex Box 1
Workplan of the Sub Committee on Sustainable Fisheries
of the Sulu-Sulawesi Marine Ecoregion (2007- 2010)

**1. REGENERATION, REHABILITATION AND RESTORATION OF
DEGRADED COASTAL WETLANDS**

- Regeneration, rehabilitation and restoration of degraded coastal wetlands including abandoned shrimp farms, degraded coastal wetlands , degraded forest reserves and other coastal areas.
- Information and experience sharing on regeneration, rehabilitation and restoration of coastal wetlands.

2. ILLEGAL, UNREGULATED AND UNREPORTED (IUU) FISHING

Determine the status and issues of IUU fishing along the borders of SSME.

- Joint and parallel monitoring, controlling and surveillance (MCS) to effectively address cross border IUU fishing.

3. AWARENESS PROGRAMMES

- Develop a common communication strategy to increase public awareness on the issues and threats to sustainable fisheries and its implementation.
- Implementation of public education and awareness programmes on particular issues as these relates to sustainable fisheries, aquaculture, living aquatic resources exploitation and trade.

4. SUSTAINABLE AQUACULTURE

- Develop joint pilot projects in establishing experimental farms for the culture of high value seaweed species other than *Kappaphycus* and *Eucheuma* species, and the establishment of integrated multi-species (e.g. mollusks, sea cucumbers, siganids, and other invertebrates) seaweed farms.
- Jointly develop and share improved quality seed stocks for seaweed farms.
- Implementation and adoption of Best Management Practice (BMP) among aquaculture smallholders.
- Rehabilitation of abandoned shrimp farms for other sustainable aquaculture uses.

5. FISHERIES RESEARCH

- Joint and parallel population studies on shared fish stocks specifically on tunas and other highly migratory species as well as small pelagics.
- Information sharing on existing legislation and policies on the management of tuna and small pelagics.
- Joint and parallel research on the artificial propagation of high value species for aquaculture as an alternative to wild catch.
- Information and data sharing on shared fish stocks and aquaculture research as mentioned in bullet #3 above.
- Collaborative oceanographic surveys in the SSME.

6. TRADE IN LIVE REEF FISHES AND MARINE ORGANISMS

- Collection and collation of baseline information on groupers, humphead wrasse, other Live Reef Fish Trade (LRFT) species as well as marine ornamentals .
- Study on cross border trade of groupers, humphead wrasse and other LRFT species as well as marine ornamentals.
- Exchange of information of each countries' policies and legislation on LRFT.
- Work towards the voluntary adoption by traders of a proposed Code of Practice and for sustainable LRFT.
- Conduct an in-depth study on the chain of custody in LRFT to generate a basis for more effective policies.

7. MARINE TURTLE AND SEAWEED FARMS INTERACTIONS

- Assessment and status of turtle predation in seaweed farms in the three countries.

8. FISHERIES BY-CATCH

- Assessment and policy formulation on the incidence of turtles as by-catch in capture fisheries (longline, trawl nets, gill nets, lift nets)

9. COLLABORATIVE FISHERIES MANAGEMENT FOR SHARED STOCKS IN THE SSME

- Collaborate to develop a harmonized fisheries management regime for tunas and small pelagics (sardines, mackerel, round scads, anchovies etc).

10. CAPACITY BUILDING FOR STAKEHOLDERS

- Conduct an assessment for the needs of HRD to address gaps in capabilities for effective sustainable fisheries management.
- Develop and implement capacity building programmes based on the needs identified in the assessment mentioned above.
- Reciprocal programmes among the three countries for capacity building where the host country will train stakeholders from the other two countries in their respective fields of expertise and strengths as it relates to sustainable fisheries, aquaculture, living aquatic resources exploitation, trade and livelihood systems.

11. FUNDING

- Find ways and means to raise internal and external funds to implement the programmes and projects identified under the Sub Committee on Sustainable Fisheries including from international conservation organizations.

During the meeting of the Sub-Committee on Sustainable Fisheries on May 13-14, 2008 in Kota Kinabalu, Malaysia progress of work on the Work Plan of the Sub Committee was revisited and priorities were set and actual activities were identified for prompt implementation. Issues highlighted were Illegal, Unregulated And Unreported (IUU) Fishing; Live Reef Food Fish Trade; Ecosystem-based Fisheries Management; Participation By Local Government Units And Implementers; Current and Prospective Funding Avenues for Financing Current and Future Projects Under the Purview of the Sub-Committee on Sustainable Fisheries; and the Project Proposal for the GEF-funded Sulu-Celebes Seas-Sustainable Fisheries Management Project (SCS-SFM).

Constraints in ECP Implementation

Since its formation in 2006, there have been concerns raised about the sustainability of the Tri-National Committee and its three sub-committees as a management body of the SSME. Based on interviews with key informants, the following are among the perceived major constraints faced by the organization and in consequence the implementation of the ECP which it is tasked to coordinate and harmonize:

- Inadequate consideration of the institutional design leading to the formation of the Tri-National Committee and its sub-committees;
- Limited or lack of funding, manpower and overall resources for the Tri-National Committee and its sub-committees and the overall implementation of the ECP;
- Delayed implementation of the eco-region level action plan ECP although implementation of the national plans have been ongoing on the initiative of the countries and not the Tri-Committee;

- There is the absence of an effective and permanent secretariat for the Tri-National Committee;
- Limited knowledge and training of members of the sub-committees particularly the Sub-Committee on Sustainable Fisheries in small pelagic fisheries management;
- Limited electronic information and communication mechanisms between the regional, national and local stakeholders;
- Limited international and regional exposure and networking of the members Tri-National Committee and sub-committees;
- Inadequate attention to global warming and climate change as critical issues in the ECP and management of SSME; and
- Lack of performance evaluation of Tri-National Committee and its sub-committees in particular and the SSME program in general.

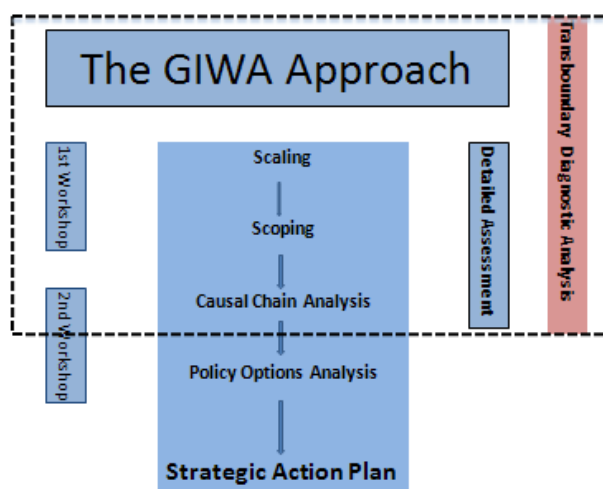
Conclusion

The SCS-SFM has been proposed partly to address the institutional issues faced by the Tri-National Committee as well as its Sub-Committee on Fisheries which is particularly involved in the implementation of the ECP related to fisheries and small pelagic resources. With this and the other project goals, the conduct of the SCS-SFM is expected to significantly increase the chance of success of the implementation of the ECP in particular and SSME management in general leading to the improved conservation and sustainable management of fisheries resources, particularly small pelagics, in the ecoregion.

Annex 2

The GIWA Methodology

The TDA is a 3-step process clearly described in the Global International Waters Assessment. The first step is **Scaling** or defining the extent of the region for management and then identifying the transboundary elements impacting on the region and determining whether they can be assessed coherently as one aquatic system. The second step is the **Scoping** or the assessing of the environmental concerns impacting the defined aquatic region. The purpose of this step is to determine the priorities that need to be acted upon by the countries in the region. The third step is the **Causal Chain Analysis (CCA)** or the tracing of socio-economic and environment impacts to their root causes. The purpose of the CCA is to identify the most important cause for each of the prioritized issues “during the Scoping assessment in order to prevent further degradation of the regional aquatic environment” (GIWA Approach).



The Sulu-Celebes (=Sulawesi) Sea has been assessed using the Global International Waters Assessment (GIWA Report No. 56; DeVantier et al., xxxx). The results of the Transboundary Analysis and the recommended policies are incorporated in various sections of this document.

Source: <http://www.giwa.net>

Annex 3

Description of Regional and Subregional Bodies Relevant to SCS SFM Project

Asia-Pacific Fishery Commission (APFIC)¹⁰⁰ is a regional organization established under the auspices of the Food and Agriculture Organisation of the United Nations. It was established under the Asia-Pacific Fishery Agreement in 1948 (Philippines; amended in 1996 and approved by the FAO Council in 1997) and is currently composed of more than 10 countries, including Indonesia, Malaysia, and the Philippines. The purpose of the organization is “to promote the full and proper utilization of living aquatic resources by the development and management of fishing and culture operations ...”. The Strategic Plan of APFIC for 2008-2012 are: (1) continuing as regional consultative forum (on IUU and Ecosystem Approach to Fisheries); and (2) “facilitating the emergence of regional agreements and arrangements”; (3) coordinating regional organizations among organizations working on fisheries in the Asia-Pacific; and (4) capacity-building in responsible fisheries and aquaculture. The SCS SFM Project will work together with the Commission to achieve the overarching goal of fisheries management and specific recommendations of the workshop on (1) fishing capacity management and IUU; and certification schemes for capture fisheries and aquaculture production (2008).

The ASEAN is a regional grouping of ten Southeast Asian countries including the SCS countries of Indonesia, Malaysia and the Philippines. Its objectives are: to (1) accelerate economic growth, social progress and cultural development in the region and (2) promote regional peace and stability through abiding respect for justice and the rule of law in the relationship among countries in the region and adherence to the principles of the United Nations Charter. ASEAN has specialized bodies and arrangements promoting inter-governmental cooperation in various fields including the ASEAN Regional Centre for Biodiversity Conservation. Furthermore, the ASEAN Secretariat has an Agriculture and Infrastructure Cluster that addresses agriculture concerns including fisheries. The project, therefore, will explore with the ASEAN possibilities for cooperation and coordination particularly through its different initiatives, communities and clusters. An area of interest is how the project can use the ASEAN network as a formal platform for information and dissemination activities, results and findings and other relevant project activities.

The BIMP-EAGA spans territories of four ASEAN countries including the three SCS countries. Its vision is the development of the East ASEAN sub-regions and the uplift of the people residing in those areas through the potential of regional economic cooperation. BIMP-EAGA has identified seven sectors where its recommended policies, programs and projects are to be carried out including agriculture, fisheries, and forestry. The organization also has Working groups which are composed of both public and private sector participants who take up relevant issues and launch projects benefiting their sectors and the region as a whole. As in the case of ASEAN, the project will explore potential and establish formal cooperation with BIMP-EAGA through its working group in fisheries particularly in information and dissemination activities, results and findings and other relevant activities of the project among BIMP-EAGA member countries. Although at present the activities of the SSME Tri-Com and the Sub-Com on Sustainable Fisheries is already reported in the BIMP-EAGA working group on fisheries by personalities who are common members of these three bodies, there is still the need to formalize such cooperation.

¹⁰⁰ Asia-Pacific Fishery Commission (APFIC) – <http://www.apfic.org>

The SEAFDEC is an inter-governmental organization established in December 1967 for the purpose of promoting sustainable fisheries development in the Southeast Asian region. Its current member countries are Brunei Darussalam, Cambodia, Indonesia, Japan, Lao PDR, Malaysia, Myanmar, the Philippines, Singapore, Thailand and Vietnam. SEAFDEC undertakes research on appropriate fishery technologies, trains fisheries technicians, and disseminates fisheries information. Four Departments were established to pursue the objectives of SEAFDEC: the Training Department in Thailand for marine capture fisheries development, Marine Fisheries Research Department in Singapore for fishery post-harvest technology, Aquaculture Department in the Philippines for aquaculture research and development; and the Marine Fishery Resources Development and Management Department (MFRDMD) in Malaysia for the development and management of the marine fishery resources in the EEZs of member countries. The project will therefore explore potential and establish actual cooperation with the relevant departments of SEAFDEC in the conduct of project activities related training, fisheries post-harvest, aquaculture, and marine fisheries activities of the project at the regional, national and demonstration site levels. Fisheries research is a specific area of formal collaboration that will be pursued.

The WorldFish Center is an international, non-profit, non-governmental organization working in partnership with a wide range of government and non-governmental agencies at the regional, national and local levels in the developing world, and with advanced research institutions worldwide. It carries out research-for-development to improve small-scale fisheries and aquaculture. Its key competencies are in Policy Economics and Social Sciences, Natural Resource Management, and Aquaculture and Genetic Improvement. To achieve its objectives, the WorldFish Center works closely with partners and builds connections between the developing and developed worlds. Given the expertise of the WorldFish Center, the project will explore possibilities of tie-ups and cooperation with it particularly in the areas of policy, economics and social science research and natural resource management in the SCS at the regional, national, and local levels. The project will also look into potential tie-ups in research on aquaculture activities that can be developed and implemented in the demonstration sites for poverty alleviation and alternative livelihoods of artisanal small pelagic fishermen and other coastal households.

The CTI is a regional program by the governments of countries in the Coral Triangle area including Indonesia, Philippines, Malaysia, Timor Leste, Papua New Guinea and the Solomon Islands. This project is part of the CTI program. CTI is supported and carried forward by private sector, multilateral agencies (GEF, ADB, UNDP, FAO, etc), bilateral donor agencies (e.g, USAID, AUSAID) and civil society (NGO) partners. The CTI aims to provide a major contribution toward safeguarding the region's marine and coastal biological resources for the sustainable growth and prosperity of current and future generations. At present, the CTI has already drafted a Regional Program of Action that outlines its plan to attain its objectives in the coral triangle area¹⁰¹ (CTI 2009). The first goal of the plan is Priority Seascapes Designated and Effectively Managed. Under this goal is Regional Action 1 which is to adopt a general model for the sustainable management of seascapes by working closely with existing seascape partners including the SSME Tri-Com to jointly adopt a set of "Key Elements for Sustainably Managed Seascapes". Also under first goal of the plan is Regional Action 2 which aims to establish seascape capacity-building and learning mechanisms which could include the Tri-Com and Sub-

¹⁰¹ Coral Triangle Initiative. 2009. Regional plan of action. Port Moresby Draft.

Committees of the SSME. The project will therefore explore with CTI possibilities on how Regional Actions 1 and 2 of Goal 1 of the RPOA could be implemented in the case of the Tri-Com and Sub-Com on Sustainable Fisheries of the SSME and eventually establish actual cooperative agreements.

The PEMSEA is a regional initiative that is active in the pursuit of sustainable development, management and use of coastal and marine resources through intergovernmental, interagency, and multi-sectoral partnerships. Its mission is to build interagency, inter-sectoral, and inter-governmental partnerships for achieving the sustainable development of the Seas of East Asia. Together with its partners, PEMSEA has developed the Sustainable Development Strategy for the Seas of East Asia (SDS-SEA) which provides a regional implementing framework and strategies for achieving the goals of key international agreements and action plans, including the UN Millennium Development Goals, the World Summit on Summit on Sustainable Development Plan of Implementation, Chapter 17 of Agenda 21 and other international instruments related to coasts, islands and oceans. At present, PEMSEA focuses on the development objective of facilitating the implementation particularly of the SDS-SEA. The project therefore will explore possibilities of partnership with PEMSEA in the development of the SAP as well as the implementation of the SAP consistent and complementary with the SCS-SEA.

The COBSEA consists of 10 member countries including Indonesia, Malaysia, Philippines, Singapore and Thailand), Australia, Cambodia, People's Republic of China, Republic of Korea and Vietnam. It steers the East Asian Seas Action Plan (The Action Plan for the Protection and Development of the Marine Environment and Coastal Areas of the East Asian Seas Region) which was approved in 1981 and stimulated by concerns on the effects and sources of marine pollution. The main components of the action plan are assessment of the effects of human activities on the marine environment, control of coastal pollution, protection of mangroves, seagrasses and coral reefs, and waste management. The project will explore possibilities on how it can use COBSEA as a platform particular related to the information and dissemination activities of the project. The project will also establish tie-ups with COBSEA in the development and implementation of the SAP to make it consistent and complementary with the East Asian Seas Regional Action Plan.

The CI, WWF and CTI are international NGOs working in the area of natural resource conservation and overall sustainable development. These three NGOs have formed a consortium to participate in CTI. Furthermore, WWF and later CI have been active in the process of developing and implementing a sustainable development structure for the management of the SCS which lead to the formation of the SSME Tri-Com and its three sub-committees. The project will continue earlier cooperation with these international NGOs, explore potential tie-ups and establish actual agreements for the effective and efficient implementation of the project in harmony with the goals, programs, projects and activities of the NGOs. Potential areas of cooperation can be at the regional, national and local levels and could cover various concerns including training and capacity building and sustainable financing.

Annex 4
Involvement of Conservation International, Philippines
in the Sulu-Celebes Sea Large Marine Ecosystem

Conservation International¹⁰² is a non-profit organization (vision) with the mission “to conserve the Earth's living heritage – our global biodiversity – and to demonstrate that human societies are able to live harmoniously with nature.” The conservation work of CI is guided by three principles: based on cutting-edge science, comprehensive partnerships, and concern for human well-being. Their goals are to safeguard valuable species, preserve the most important landscapes and seascapes, and support communities that care for and rely on Earth's natural resources. To achieve these goals, CI employs three strategies: dedicating to innovation, raising awareness about conservation, and maintaining business-like effectiveness. CI founds its conservation ethic on five fundamental core values on: passion for nature; respect for each other; integrity in decision-making; optimism in preservation and conservation; and courage to challenges (for conservation). CI is a member of the Consortium of Non-Governmental Organization that supports the Coral Triangle Initiative of Indonesia, Fiji, Malaysia, Philippines, Solomons, and Timor Leste.

Conservation International (CI) carries out its mission around the world in terrestrial and marine priority areas. CI has headquarters in the United States of America and has field offices in Indonesia and the Philippines in the Sulu-Celebes Sea Large Marine Ecosystem. The Country Offices of Indonesia and the Philippines have been established in the last 10 years. Mr. Romeo Trono, the Country Director of CI, Philippines is a permanent member of the Delegation of the Philippines to the Tri-national Committee for the Sulu-Sulawesi Marine Ecoregion (SSME).

The Country Office of CI in the Philippines promotes conservation the Sulu-Celebes Large Marine Ecosystem following the Sulu-Sulawesi Marine Ecoregion Conservation Plan that was ratified in 2006 by the Governments of Indonesia, Malaysia, and the Philippines. It is implementing the Sulu-Sulawesi Seascape (SSS) Program to conserve the endangered, highly migratory marine turtles in the SC LME by establishing a safe migratory pathway along Palawan and northeastern Borneo. CI-Philippines has implemented SSS activities with partners in Sabah, Malaysia and in the Philippines since 2006.

Conservation International, Philippines, since its establishment in the SCS LME region, works closely with the Tri-National Committee of the SSME and its Sub-Committees on Sustainable Fisheries, Marine Protected Areas and Networks, and Charismatic, Endangered, Threatened, and Highly Migratory Species. CI, Philippines has assisted the SSME Sub-Committee on Sustainable Fisheries (SSME-ScSF) in the submission to the Global Environment Facility for a trans-boundary project on fisheries management. CI has invested resources in 2006 and 2007 for the preparation of the proposal, review and approval of the Sub-Committee, and its endorsement by the respective Focal Points of the Global Environment Facility of Indonesia, Malaysia, and the Philippines. The SSME-ScSF formally adopted, at its Annual Meeting in 2007 in Kota Kinabalu, the Sulu-Celebes Sea Sustainable Fisheries Management (SCS-SFM) proposal as part of its Action Plan and for its focus on small pelagic fisheries. The Project Identification Fund was approved by GEF in 2007 and a Project Preparation Grant for USD 185,000 was approved in 2008. CI provided USD 100,000 and UNDP USD 85,000 to fund the activities in the PPG. The SSME-ScSF at its Second Annual Meeting in Kota Kinabalu, 2008 appointed CI,

¹⁰² Conservation International website – <http://www.conservation.org>

Philippines to coordinate the implementation of tasks under the PPG. The representatives of the SSME-ScSF agreed on the general workplan, budget allocation for the components of the project, and for the involvement of CI, Philippines in implementing the activities for the Transboundary Diagnostic Analysis of the SCS and for hosting the Project Management Unit for the SCS-SFM Full-Sized Project at the Tri-national Consultation for the Sulu-Celebes Sea Sustainable Fisheries Management, held on April 15 and 16, 2009, in Pasig City, Philippines.

Annex 5

Description of the Demonstration and Replication Sites

Criteria for Selection of Demonstration Sites

A set of criteria was prepared by the Project Team to guide the selection of Demonstration Sites in each Country. The criteria are:

1. accessibility; safety, and security;
2. has supportive administration;
3. has fishing ground for small pelagic fisheries;
4. has significant contribution to marine fisheries production and income; and
5. has transboundary importance and linkages (ecological, socio-economic).

The criteria were not weighted; the site which had the most positive attributes was selected. The National Consultants of Indonesia, Malaysia, and the Philippines presented and proposed two (2) Demonstration Sites. The selection of the Country Demonstration and Replication Sites were finalized and agreed upon during the Tri-National Consultation convened by Conservation International during 15 and 16 April 2009, Metro Manila, Philippines. The Tri-National Consultation was attended by representatives of the Sulu-Sulawesi Marine Ecoregion Sub-Committee on Sustainable Fisheries, resource persons, staff of Conservation International, and Project Team.

Indonesia: Tarakan Demonstration Site¹⁰³

Coordinates and Location: Tarakan, 3° 18' 0" North, 117° 38' 0" East. Tarakan is located in the eastern coast of north Borneo and near the border between Kalimantan Province and Sabah State, Malaysia. Tawau Municipality is the closest municipality to Tarakan at the border.

Administration: Tarakan District, Kalimantan Province

Accessibility, safety, and security: Tarakan is accessible from Jakarta by air via Balikpapan. It is also accessible by land and ferry from Tawau, Sabah, Malaysia. It is safe and secure.

Population: There are total number of fishermen is 2,015 and 1434 households.

Profile of the small pelagic fisheries in the Sulu-Celebes Sea

The existing fishing ground for the small pelagic fishes is confined to waters up to 200 m isodepth between Tarakan and Berau¹⁰⁴. The fishing area is estimated at 30 km².

The artisanal fishery for small pelagic fishes was begun Bugis people, as early as the 17th Century, who migrated between Makassar and Kalimantan with monsoonal winds. Migration from other provinces of Indonesia to Kalimantan, Borneo during the 1970s is a factor that influenced the increase in artisanal fisheries.

¹⁰³ Based on: Badrudin, M. 2009. Profile of Small Pelagic Fisheries of Sulawesi Sea, Indonesia. Report written for Conservation International and the Sulu-Sulawesi Marine Ecoregion Sub-Committee on Sustainable Fisheries.

¹⁰⁴ Tarakan and Berau are Priority Conservation Areas in the SSME that are important in the Indo-Pacific Region

The commercial fishing operations for small pelagic fisheries in the Tarakan area are still in the stage of early exploitation. The registered purse fishing vessels in 2008 is only 4 four units with each unit employing 12-15 fishers. It is acknowledged that the contribution of the small pelagic fisheries to the local economy is relatively little compare with the shrimp and demersal fisheries. No downstream activities are present for small pelagic fisheries but only for shrimp and demersal fish catches.

Marine fisheries in the Sulawesi Sea, SSME Territory of Indonesia

It is presumed that there is only one (1) unit stock from East Kalimantan, Central Sulawesi, Gorontalo and North Sulawesi along the coast line of the Sulawesi Sea. The profile of the small pelagic fisheries of Tarakan can be gleaned from the general profile of the marine fisheries in the territory of Indonesia in the Sulu-Sulawesi Marine Ecoregion. A more focused profiling of the Demonstration Site will be conducted at the implementation of the SCS-SFM Project.

The marine fisheries of the SSME, Indonesia is important in providing food to the population living in the area and in other Provinces of Indonesia and in providing employment. Most of the small pelagic fish are usually consumed locally and a small amount is transported to East Java and South Sulawesi usually by fish-traders. The number of fishers engaged in fisheries, recorded from the area along the coast line of the Sulawesi Sea, is 721,671 (Table 1). About 50,000 fishers work part-time. Data on number of the small pelagic fishers are not available.

Annex Table 1. Number of fishers in the waters of the SSME

	Total	Full time	Part time (major)	Part time (minor)
2000	88742	31,717	38,059	18,966
2001	104441	41,528	41,946	20,967
2002	104441	41,528	41,946	20,967
2003	66468	35,511	18,901	12,057
2004	64783	35,012	18,192	11,578
2005	78564	37,350	26,346	14,868
2006	69,938	35,958	21,146	12,834
2007	71,095	36,107	21,895	13,093
2008	73,199	36,471	23,129	13,598

Seines and lift-nets are common gears in the coastal areas of Kalimantan and Sulawesi Provinces of Indonesia. A total of 16,132 gears were reported in the Fisheries Statistics (Table 2). The most numerous is the raft lift-net at 7,552 units and followed by the drift gill net at 6,519. Purse-seines, which are the most effective fishing gear for small pelagic fishers are only 340. Only 4 of these purse-seines are used in East Kalimantan.

Annex Table 2. Number of small pelagic fishing gears in the waters of the SSME

	2000	2001	2002	2003	2004	2005	2006	2007	2008
Beach seine	488	407	399	399	656	485	513	551	516
Danish seine	745	919	415	415	600	477	497	525	500
Drift Gill Net	2729	3134	3,017	3,017	5,684	5,573	6,425	7,560	6,519
Encircling net	342	152	85	85	302	157	181	214	184
Fixed Lift	200	165	249	249	482	327	353	387	355

	2000	2001	2002	2003	2004	2005	2006	2007	2008
net									
Other Lift net	395	584	186	186	143	172	167	161	166
Purse seine	217	297	262	262	432	319	338	363	340
Raft Lift Net	484	875	1,796	1,796	2,504	8,699	7,666	6,290	7,552

The landing in 2008 was about 26,561 tons and is estimated at USD 53,122,000¹⁰⁵. The average income¹⁰⁶ of a fisher is USD 726.72 in 2008.

Status of marine fisheries in Sulawesi Sea

Catch and effort data analysis were focused to the small pelagic fish resources and its fishing gears used. Since the fish resources in the surrounding waters of SSME have been exploited using many different fishing gear with different catchabilities, the catches of all gears were standardized¹⁰⁷ (Table 3).

The status of marine fisheries in Sulawesi Sea is in decline as indicated by the declining catch-per-unit-effort (CPUE; Table 3). The highest CPUE was recorded in 2003; the CPUE declined to 9 tons/unit in 2008.

Annex Table 3. Trend of production (catch), effort (in mini-purse-seine unit), and catch per-unit of effort (CPUE) of the small pelagic fisheries in the waters of the SSME

	Catch (tons)	Effort (unit)	CPUE (tons/unit)
2000	17,166	574	29.9
2001	25,696	758	33.9
2002	22,055	956	23.1
2003	30,534	956	31.9
2004	24,002	1,470	16.3
2005	27,325	3,194	8.6
2006	26,179	2,918	9.0
2007	26,217	2,550	10.3
2008	26,561	2,888	9.2

Transboundary linkages and issues

Tarakan, Kalimantan, Indonesia has ecological and socio-economic linkages with Malaysia and the Philippines. The ecological links are driven by monsoonal circulation and exchanges of marine waters between Sulu and Sulawesi Seas. Larval stages small pelagic fishes are carried by the currents from spawning grounds and juvenile and adults stages are migratory. Stocks of

¹⁰⁵ Calculated by multiplying total landing X mean price/kg, i.e., 26,561 kg X USD 2/kg = USD 53,122,000

¹⁰⁶ Calculated by dividing total revenue of catch by total number of fishers, i.e., USD 53,122,000/73,199 = USD 725.72

¹⁰⁷ The estimated FPI were calculated based on the production per unit gear, a sort of data available in the book of provincial fisheries statistics. For the application of the surplus production model, based on the available data a standardization of fishing gears need to be carried out through the estimation of Fishing Power Index (FPI). Fishing gear with highest catch per gear having the FPI = 1.000 and assumed as a standard gear or standard effort. The FPI of other fishing gear were obtained by comparing catch per gear of a certain gear with the catch per gear that having FPI = 1.000. The annual total fishing effort were obtained through the addition of the multiplication between number of fishing unit in a certain year with the FPI of that gear.

small pelagic fishes are, as such, assumed as shared among Malaysia and the Philippines. The likelihood that the stocks are shared is high, e.g., the round scad, *Decapterus macrosoma*, belong to one stock in the Indo-Malay archipelago¹⁰⁸.

The socio-economic linkage of Tarakan, Kalimantan with Malaysia and the Philippines is strong and varied¹⁰⁹. Indonesian fishermen are the main labor force in the small pelagic fishing fleet in Sabah, Malaysia. A significant portion of the landings of small pelagic fishes are exported from Sabah to Tarakan and Nunukan, Kalimantan.

Illegal, Unreported, and Unregulated (IUU) occurs in the Sulawesi Sea, Indonesia. Illegal gears, such as baby-trawls, are used in coastal waters, capturing juvenile stages of pelagic fishes. The impact of baby-trawling to stocks of pelagic fishes is unknown at present. Numerous (about 1,000 units) of small vessels are fishing in coastal waters, many are not registered. Some fishing vessels, with Malaysian or Philippine flags, have entered the fishing grounds of Kalimantan and Sulawesi, Indonesia.

The Government of Indonesia plans to open the fishing ground in Sulawesi Sea to the purse-seine fishing fleet from the Indonesian Seas, due to the decline of the fisheries in the Indonesian Seas. A fisheries development of the purse-seine fishery and the management are needed in view of the potential increase in exploitation rate on shared stocks of small pelagic fishes.

Fisheries Management Plan

The status of the marine fisheries requires a fisheries management plan (FMP) of both small pelagic and marine fisheries, in general, in Tarakan and the adjacent waters. This has not been formulated as yet but the government has plans for its preparation. Several inter-related aspects of the fisheries need to be thoroughly studied for the preparation of a management plan. These aspects include the biology and population dynamics of target species, fishing gear/boat technology, as well as socio-economics of the fisheries and their stakeholders. Once an FMP is formulated, monitoring and surveillance activities have to be regularly carried out. For this purpose, the Tarakan District of Marine Affairs and Fisheries, supported by the related surveillance bodies at District level, will be strengthened to become an effective management unit. Support of the local government unit for fisheries management is expected because of the devolution of authority to manage natural resource uses to cities and districts.

Indonesia: Kwandang Replication Site

Coordinates and Location: 00° 30'– 01° 00' N, 121°–123° 50' E

Administration: Kwandang, Gorontalo Province

Accessibility, safety, and security: Mulou is accessible by land from Gorontalo City, Sulawesi. It is accessible by boat from the small islands around the xxxx Bay.

¹⁰⁸ Borsa, P. 2003. Genetic structure of round scad mackerel, *Decapterus macrosoma* (Carangidae) in the Indo-Malay Archipelago. *Marine Biology* 142: 575-581.

¹⁰⁹ Cabanban, A. S. 2009. Profile of Small Pelagic Fisheries of Sabah, Malaysia. Report written for Conservation International

Population: unknown, at present

Kwandang is planned to be the center of maritime industries in Gorontalo Province of the Sulawesi Sea. Moluo, a village with an area of 15 km², will be developed as the center of Kwandang and for maritime industries. A fishermen settlement will be developed in the village of Ponelo, with an area of 10 km².

Fishing activity around Kwandang

The fishing ground of Kwandang is within 4-5 nm and within the coastal waters, sheltered by the Sulawesi headland. The fishery provides livelihood to about 1,150 persons. The gears used by fishermen are purse-seine, gill-net, lift-net (*bagang*), Danish seine, and handline.

Transboundary linkages and issues

The transboundary link is ecological with marine water circulation. No trading links with the Sabah and Mindanao occur at present.

Fisheries management

A fisheries management plan will be necessary in conjunction with the economic development planned for the area. The devolution of fisheries management to cities and districts in Indonesia will pave the way for the receptiveness of the local government units to ecosystem-based management of fisheries within the context of Integrated Coastal Zone Management.

Malaysia: Tawau Fishing Zone Demonstration Site

Coordinates and Location: Lahad Datu, 5°2'N to Tawau, 4°15' N, 117.83° E

Administration: The Southeastern Fishing Zone of Sabah is commonly called the Tawau Fishing Zone. The Fishing Zone is under the administrative jurisdiction of Lahad Datu and Semporna Districts and Kunak and Tawau Municipalities and all fall under the Tawau Division.

Accessibility, safety, and security: Lahad Datu and Tawau have direct flights from Kota Kinabalu. Semporna is accessible by air through Tawau while Kunak can be reached through Lahad Datu or Tawau and land from Kota Kinabalu. Semporna is 1.5 hours by land from Tawau airport and 13 hours from Kota Kinabalu. The area is safe and secure. Malaysia has strengthened the number of the military in the area, established the Malaysian Maritime Enforcement Agency, and has established joint patrol operations with the Philippines.

Population: 708,371¹¹⁰

Profile of the Small Pelagic Fisheries¹¹¹

The Southeastern Fishing Zone of Sabah, Malaysia is 64 km long and 49 km wide, extending from the northern tip of the Dent Peninsula to the border of the Sabah State, Malaysia and

¹¹⁰ Total population of all Districts and Municipalities from the last available census in 2005; undocumented people are not accounted for in this census

¹¹¹ Based on Cabanban, A. S. 2009. Profile of the Small Pelagic Fisheries of Sabah, Malaysia. Report written for Conservation International and the Sulu-Sulawesi Marine Ecoregion Sub-Committee on Sustainable Fisheries.

Kalimantan, Indonesia. The Southeastern Fishing Zone is commonly called the Tawau Zone. The Fishing Zone includes Darvel Bay and Cowie Bay, on the eastern coast of Sabah¹¹². The Tawau Division administers the land and marine waters: the nearshore waters of Darvel Bay are under the administration of the District of Lahad Datu and the Municipality of Kunak while the nearshore waters of Cowie Bay are under the administration of the District of Semporna and the City of Tawau. Semporna and Tawau are accessible by air, land, and sea. Lahad Datu and Tawau have direct air-links with Kota Kinabalu. Kunak and Semporna are accessible by air via Lahad Datu and Tawau, by land, and by sea.

Darvel Bay is fringed with disturbed mangrove forests and the embayment is deep and dotted with several islands at the mouth of the bay, demarcating from the Sulu Sea and the Sabah mainland. The bay receives sediments and nutrients from rivers, which are circulated within the bay monsoonal currents. The islands in Darvel Bay are surrounded by coral reefs, with new records and species of corals new to science. Seagrass beds are found along the southeastern part of the Bay. These diverse habitats are suitable habitats of nearshore fishes, coral reef fishes, pelagic fishes, and invertebrates, such as shrimps and crabs. The coastal, pelagic waters are migratory pathways of marine turtles and marine mammals.

Darvel Bay is noted as the fishing ground for the trawl, lift-net (“*bagang*”), and purse-seine fisheries. There 31 trawls, 144 lift-nets, and 26 purse-seine gears in 2005 registered in Lahad Datu and Kunak to fish in these waters. The lift-net fishery is for catching anchovies while the purse-seine fishery is for catching scads, round scads, mackerels, small tunas (*Auxis* spp.). Herrings are caught in both the lift-nets and purse-seines but are not targeted mainly for food. Most of the catch of herrings is considered by-catch for processing to fish-meal. The number of artisanal fishermen are 653 (Lahad Datu + Kunak) while the commercial fishermen were 220 in 2005 in the small pelagic fisheries. The total landings of small pelagic fishes from lift-nets and purse-seines were 49,445 mt with an estimated value of 53.3 million USD in 2005.

Cowie Bay is smaller and more open than Darvel Bay. The coastline is covered by mangrove forests that are protected under the Forest Department or allocated to the Department of Fisheries, Sabah for aquaculture development. The nearshore waters have extensive seagrass beds and a barrier reef, extending for 579 km long.

Cowie Bay is also noted as the fishing ground for the trawl, lift-net, and purse-seine fisheries. There were 155 trawlers, 382 lift-nets, and 41 purse-seines registered in Semporna and Tawau in 2005. The total number of artisanal fishermen was 1,251 and 307 commercial fishermen registered in these two Districts. The total landings of small pelagic fishes were 51,704 mt with estimated value of 64 million USD.

The Tawau Fishing Zone is an economically important fishing zone. The combined landings of small pelagic fisheries in the Tawau Fishing Zone bring revenue from domestic and exports and provide employment to about 2,000 registered fishermen and unknown number of migrant fishers.

¹¹² Darvel Bay and Cowie Bay are part of the Priority Conservation Area (PCA), labeled Semporna PCA, of the Sulu-Sulawesi Marine Ecoregion Conservation Plan. The Semporna PCA is important in the Indo-Pacific Region. The biodiversity features are: diverse coral reefs types and organisms; habitat and pathway of migratory species, e.g., turtles, marine mammals; and, adjacent to up-welling along the Tawi-Tawi Ridge. The Semporna PCA is part of the transboundary Semporna, Malaysia-Tawi-Tawi, Philippines PCA. Semporna PCA has the largest area of coral reefs in Malaysia. It was identified as a potential site for nomination by Malaysia as a World Heritage Site in Southeast Asia at the Hanoi Workshop in 2002.

Transboundary links and issues

The Tawau Fishing Zone has transboundary links with Indonesia and Malaysia in the Sulu-Celebes Sea. The species of small pelagic fishes in the landings are the same as those landed in Zamboanga, Philippines (e.g., herrings, sardines, round scads, scads), indicating the possibility of exploiting a shared stock. Indonesians and Filipinos are employed in the commercial fishing operations. Landings of small pelagic fishes are exported to Nunukan and Tarakan, Kalimantan, Indonesia. There also reports of sale of small pelagic fishes from Semporna to Tawi-Tawi and fishing outside of the narrow territorial waters in adjoining territorial water of Indonesia and the Philippines. Fishermen in Sabah are interested in having access rights to fishing in Indonesian and Philippine waters.

Fisheries management

The fisheries management at present is limited to licensing and gear regulations. More fishing regulations are needed to address the decline in catches, from the suite of Growth, Control, and Maintenance mechanisms. The application of an integrated approach to fisheries management will have support from the fishing industry as they are interested in managing the fishery for the sustainability of their economic activity. The cooperation of District Officers and Mayors of Lahad Datu, Kunak, Semporna, and Tawau can be expected because of the past exposure to Integrated Coastal Zone Planning and development of the Shoreline Management Plan in Sabah.

Malaysia: Sandakan Fishing Zone Replication Site

Coordinates and Location: Kudat, 6°53'N 116°50'E, to Sandakan, 5.75°N, 118°E

Administration: The Northeastern Fishing Zone of Sabah is commonly called the Sandakan Fishing Zone. The Fishing Zone is under the administrative jurisdiction of Kota Marudu District, Sandakan City, Kudat and Pitas Municipalities and fall under the Sandakan Division.

Accessibility, safety, and security: Only Sandakan City has a direct commercial air link with Kota Kinabalu. All the municipalities and city are accessible by land or sea from Kota Kinabalu within 5 hours. The area is safe and secure, as in the Tawau Fishing Zone. Conservation International is working with the Malaysian Maritime Enforcement Agency on strengthening Monitoring, Control, and Surveillance of fishing operations to reduce poaching of fishery resources by foreign vessels.

Population: 663,783¹¹³

Profile of the Small Pelagic Fisheries

The Sandakan Fishing Zone is long and narrow, from the eastern peninsula off Kudat to the southern end of Sandakan Bay. The coastline is fringed with mangrove forests while the islands are fringed with coral reefs. The marine waters are deep and suitable for pelagic fisheries.

The small pelagic fisheries have artisanal and commercial activities. The small pelagic fisheries provide employment to 2,608¹¹⁴ artisanal fishermen and 219 commercial fishermen. Artisanal

¹¹³ Combined population of mainly coastal areas (excluding Kinabatangan) as of the last available census data in 2005; undocumented people are not included in the census

fishing is done throughout the coastline. Commercial operators and 14 purse-seiners are registered only in Kudat and Sandakan but have access throughout the length of the Northeastern Fishing Zone.

The Sandakan Fishing Zone is economically important. The landings reported in 2005 was 7,748 mt from commercial fishing and 1,349 mt. The combined landings have an estimated value of 1.6 million USD in 2005. The landings are sold domestically or exported to China, Singapore, Europe and other countries.

Transboundary links

The socio-economic links of Sandakan Fishing Zone with Zamboanga City is strong. There is regular ferry service between the two cities where marine products are brought in from the Philippines. Groupers and wrasses are also brought in live from Palawan to Kudat and Zamboanga to Sandakan. The grow-out operations for groupers and wrasses in Kudat and Sandakan are fed with small pelagic fishes caught in the Sandakan fishing zone. The grown fishes are then exported mainly to Hong Kong. Fishermen from Indonesia and the Philippines are likewise employed in fishing and marketing operations. Purse-seine operators of Sandakan fish at the international border with the Philippines and sometimes across the border.

Fisheries management

The fisheries management at present is limited to licensing, gear regulations, and lighting regulations (for purse-seiners). More fishing regulations are needed to address the decline in catches, from the suite of Growth, Control, and Maintenance mechanisms. The application of an integrated approach to fisheries management will have support from the fishing industry as they are interested in managing the fishery for the sustainability of their economic activity. The cooperation of District Officers, City, and Mayors of Kudat, Kota Marudu, Pitas, Beluran, and Sandakan can be expected because of the past exposure to Integrated Coastal Zone Planning and development of the Shoreline Management Plan in Sabah. Sandakan District has an existing Integrated Coastal Zone Management Plan Plan.

Philippines: Zamboanga City Demonstration Site¹¹⁵

Coordinates and Location: Zamboanga City - 6⁰54'N, 122⁰4' E

Administration: Zamboanga City, Zamboanga del Sur, Region IX, Mindanao

Accessibility, safety, and security: Zamboanga City can be reached by air and sea from Manila, Cebu, Davao, and many cities of the Philippines. Prudence is necessary in moving in the area due the presence of armed groups; it is necessary to work closely with local government authorities and the fishing industry. The Malaysian and Philippine governments conduct joint patrols to combat illegal immigration, smuggling of goods, and piracy.

Population: Zamboanga City – 774,407; Region IX – 3,230,094

¹¹⁴ This are registered fishermen only; the number fishermen with no documents are unknown, possibly about 20,000 in all of Sabah.

¹¹⁵ Based on Resma, 2009. Profile of the small pelagic fisheries of the Philippines. Report prepared for Conservation International and the Sulu-Sulawesi Marine Ecoregion Sub-Committee on Sustainable Fisheries.

Profile of Small Pelagics Fisheries

The 3,622 municipal fishing boats (*bancas*) and 465 commercial fishing vessels and support boats (2008 data). In the commercial fishing sector, 12 types of gears are used to catch small pelagics while in the municipal sector, at least 20 gear types were recorded. . Among the commonly used gear for small pelagic fishing are bag-nets, purse-seines and ring nets for commercial fishing as well as gill-nets, beach seines, and round haul-seines for municipal fishing.

A unique feature of fishing for pelagic fishes in the Philippines is through the use of floating but anchored fish aggregating devices (FADs), locally known as “*payaos*.” Extensively used by purse seiners and ring netters, big and small, they are used to concentrate fish for capture, thus effectively reducing the searching time and at the same time maximizing the fishing time of a fish catcher vessel. Some fishing companies also practice the method of grouping two or more “*payaos*” for net setting by a catcher to maximize catch for the day. Understandably, these “*payaos*” are just situated proximate each other for quickness in grouping maneuver. Some fishing vessels set their nets on fish schools and aggregations more than once daily whenever the opportunity arises. Another innovation is the use of the so-called “super-lights” (high intensity flood lights) to attract and herd fish for capture. It is an essential method for purse-seiners, bag-netters, and ring-netters.

Landings, economic value

The small pelagics fisheries contribute to marine fish production in the Philippines. Commercial-fishing land 63% of small pelagic harvest from 1991-2001 is caught by commercial fishing. Sardines, roundscads, mackerels and anchovies are the major bulk of the total catch. Roundscads and sardines comprised mostly the commercial catch while mackerels, sardines and anchovies came from municipal catch..

The catch of small pelagic fishes was traditionally intended for domestic consumption fresh or processed into dried, smoked, canned, or fermented preparation. If not consumed fresh, roundscads are canned (sardine style) and distributed throughout the Philippines while fusiliers and big-eye scads are processed, dried and marketed locally. Small pelagic fishes are also processed into fish meal, particularly if small-sized and/or no longer fresh. Roundscads are also exported for use as excellent tuna baits by foreign longline vessels.

Beginning 1986, small pelagic production has shifted towards export; small pelagic are traded and marketed worldwide in various forms (fresh, chilled, brined, salted, preserved, etc.). Canned sardine products were exported to Malaysia, United States, Canada, Middle East, and European Union, amounting to 11,200 MT and valued at 16.7 M USD in 2007.

Transboundary links and issues

The transboundary importance of Zamboanga City and other municipalities along Zamboanga del Sur is high in the Sulu-Celebes Sea is high. The stocks of small pelagic fishes that are exploited are likely shared stocks with Indonesia and Malaysia. The ecosystems in the vicinity may be spawning grounds and migratory pathways of juvenile and adults. The trading between Zamboanga and Sandakan, Sabah is regular, where fishery goods are brought in from Zamboanga to Sandakan to be traded. Canneries in Zamboanga also export to Malaysia and discussions are underway in the BIMP-EAGA for raw materials of small pelagic fishes to imported from Indonesia and Malaysia. In addition, groupers and wrasses from the Philippines are brought in from Zamboanga, which are fed with small pelagic fishes caught in Malaysian

waters (and sometimes Philippines waters). These groupers and wrasses are exported to Hong Kong in the Live Reef Fish Trade. IUU fishing occurs in the territorial waters of the Philippines but this cannot be monitored due to the distance from the regional fisheries office of BFAR.

Status of the small pelagic fisheries

As mentioned in the foregoing, the usage of small pelagics has already shifted from just being consumed locally towards exportation either in canned/fresh/chilled/frozen/ dried/smoked/salted forms. National data on export of roundscad showed a declining trend in volume, pulling down export earnings as well. Catch of roundscad starting 2004 were even lower than the bottom figures during the late 90's. This trend could be reflective of the status of the stocks of roundscad in the country. Of the total volume of export, 93% were in fresh/chilled/frozen forms.

Fisheries management

There is no fisheries management plan in place. The local government, the Bureau of Fisheries and Aquatic Resources (BFARs), and the fishing industry are supportive of developing a management plan. This plan can build on the coastal zone planning of Zamboanga City and BFAR's National Stock Assessment Program (NSAP) in the country. The fisheries management plan will include Growth, Control, and Maintenance mechanisms, based on the assessments conducted during the Project Preparation Phase. The stakeholders, particularly the City Government of Zamboanga, is supportive of the SCS-SFM Project.

Philippines: Bongao, Tawi-Tawi Replication Site

Coordinates and Location: Bongao - 5⁰45'N, 119⁰46' E

Administration: Bongao, Tawi-Tawi, Autonomous Region of Mindanao

Accessibility, safety, and security: Bongao can be reached by air and sea from Zamboanga City. Bongao has a Roll-on-Roll-off (RORO) facility. One shipping line plies Zamboanga City to Bongao. A fastcraft also services the Zamboanga City – Jolo, Sulu – Bongao, Tawi-Tawi – Sandakan, Malaysia. The Malaysian and Philippine governments hold joint patrols to combat piracy, illegal immigration, and smuggling goods.

Population: 450,346 (2007 census)

Profile of the small pelagic fisheries

The fishing ground is the coastal waters of Tawi-Tawi. The small pelagic fishes in the area are usually harvested with a bagnet with 3.0 cm stretched mesh size on board a '*palakaya*', the local motorized boat ranging from 20-40 GRT. Among the small pelagics that provide highest commercial landings in the province are anchovies, sardines, round scads (e.g., *Sardinella longiceps*, *S. fimbriata*, *S. albella*, *Decapterus marcosoma*, *Dipterygonotus balteatus*, *Rastrelliger faughni*, and *Encrasicolina heteroloba*).¹¹⁶

¹¹⁶ I.E. Aripin and P.A.T. Showers, "Population Parameters of Small Pelagic Fishes Caught Off Tawi-Tawi, Philippines," Fishbyte, *Naga, The ICLARM Quarterly* 23/4 (2000): 21-26.

All seven species showed year-round recruitment pattern with two peak periods. The small pelagic fishery is a small-scale fishery. It employs about 25,000 as municipal fishers while 1,000 persons are employed in commercial fishing.

Transboundary links

Bongao, Tawi-Tawi is linked ecologically, economically, and socially with Sandakan and Semporna, Sabah. The stocks of small pelagic are likely shared, with the dispersal of larvae and migration of juveniles and adults. The socio-economic link is more visible. About 80-90 % of groupers and wrasses from Tawi-Tawi are sold to Semporna grow-out operators for the Live Reef Fish Food Trade. These grow-out operations use a large but yet unknown proportion of the landings of small pelagic fishes in Semporna. It is also reported that catch of small pelagic fishes are sold by fishermen from Semporna to Tawi-Tawi for a price higher than in Semporna¹¹⁷. Filipino fishermen from Tawi-Tawi migrate to work in Semporna-based fishing vessels, sell fish in the markets, and work in grow-out farms.

Fisheries Management

There is no fisheries management plan in place. A couple of governmental initiatives can pave the way for the application of Growth, Control, and Maintenance mechanisms of municipal small pelagic fisheries. Bongao, Tawi-Tawi was a site of the National Stock Assessment Program (NSAP) and FISH Project. The local government unit is mandated by law to prepare a Integrated Coastal Management Plan. The Project will have the support of the local government unit from the awareness raised in fisheries-related activities and to meet obligations in local governance.

¹¹⁷ Cabanban, A. S. 2009. Profile of Small Pelagic Fisheries in Sabah, Malaysia.

Annex 6
List of Persons Interviewed for the SCS SFM Project

Name	Designation	Address
INDONESIA		
Dr. Wudianto	TWG SSME Sub-Comm Fisheries	Research Center for Capture Fisheries (RCCF), Jl. Pasir Putih Ancol Timur, Jakarta Utara 14430
Mr. Narmoko Prasmadji	National Secretary of CTI CFF Indonesia, Senior Minister Adviser for Legal Affairs , MMAF	MMAF, Mina Bahari II 7 th Floor, Jl.Medan Merdeka Timur, No. 16 Jakarta Pusat 10110.
Mr. Riyanto Basuki	Head of Sub Directorate of Fish Conservation, Directorate of Conservation and National Marine Parks, MMAF	MMAF, Mina Bahari II 7 th Floor, Jl.Medan Merdeka Timur, No. 16 Jakarta Pusat 10110.
Dr. Bambang Sadhotomo	Head of Fisheries Oceanography Res. Group. Principal Researcher, R/V SEAFDEC 2. Acoustic Resources Survey	Research Institute for Marine Fisheries (RIMF). Jl.Muara Baru Ujung, Pelabuhan Samudera. Jakarta 14440
Mr. Suwarso	Head of Small Pelagic Fish. Res. Group. Principal Researcher, Population genetic of Roundscads in the Eastern Indonesia	Research Institute for Marine Fisheries. Jl.Muara Baru Ujung, Pelabuhan Samudera. Jakarta 14440
Mr. Bambang Sumiono	Head of Shrimp and Demersal Research Group.	Research Institute for Marine Fisheries. Jl.Muara Baru Ujung, Pelabuhan Samudera. Jakarta 14440
Ms. Adriani Krismono	Head of Research Group of Fish Resources Conservation.	Research Institute for Fish Stock Enhancement. Jl.Cilalawi No. 1, Jatilihur. Purwakarta. West Java.
Dr. Didik Wahyu T.H.	Head of Research Institute for Fish Stock Enhancement.	Research Institute for Fish Stock Enhancement. Jl.Cilalawi No. 1, Jatilihur. Purwakarta. West Java.
Mr. Wejatkiko	Principal Research on the demersal fish resources in the waters of East Kalimantan (2007-2008).	Research Institute for Marine Fisheries. Jl.Muara Baru Ujung, Pelabuhan Samudera. Jakarta 14440
Mr. Anung Widodo	Chief of Research Program Division. Research Center for Capture Fisheries	Research Center for Capture Fisheries, Jl. Pasir Putih Ancol Timur, Jakarta Utara 14430
Mr. Muhammad Kasali	Program Analyst Conservation International (CI) Indonesia.	Conservation International Indonesia. Jl.Pejaten Barat No. 16A, Kemang. Jakarta 12550
Ms. Syah Rintan	Head of Marine Affairs and Fisheries	District Marine Affair and

Name	Designation	Address
	Services of Tarakan City (MAFS,TC)	Fisheries Services, Jl. Jend. Sudirman, Gd.Gadis II Lt.4. Tarakan.East Kalimantan.
Mr.Firman Noor	Head of Fisheries and Aquaculture Division, MAFS-TC	District Marine Affair and Fisheries Services, Jl. Jend. Sudirman, Gd.Gadis II Lt.4. Tarakan.East Kalimantan.
Mr. Darwis	Head of Fisheries Business (Licensing) Division. MAFS-TC (Part time lecturer at the Faculty of Fisheries – University of Borneo, Tarakan.	District Marine Affair and Fisheries Services, Jl. Jend. Sudirman, Gd.Gadis II Lt.4. Tarakan.East Kalimantan.
Mr.Suhardi Sulaksana	Head of Coastal and Surveillance Division, MAFS-TS	District Marine Affair and Fisheries Services, Jl. Jend. Sudirman, Gd.Gadis II Lt.4. Tarakan.East Kalimantan.
Mr. Misyadi	Head of Marine Capture Fisheries Section, MAFS-TC	District Marine Affair and Fisheries Services, Jl. Jend. Sudirman, Gd.Gadis II Lt.4. Tarakan.East Kalimantan.
Mr.Usman	Purse seine Fisher group Chairperson	Beringin village
Mr. H. Ahmad	Purse seine Owner	Beringin Village
MALAYSIA		
Mr. Rooney Biusing	Principal Assistant Director (Aquaculture)	Department of Fisheries Sabah Wisma Pertanian Sabah Jalan Tasik,Luyang Locked Bag 2049 88624 Kota Kinabalu Sabah, Malaysia
Mr. Jephrein Wong	Principal Assistant Director (Marine Division)	Department of Fisheries Sabah Wisma Pertanian Sabah Jalan Tasik,Luyang Locked Bag 2049 88624 Kota Kinabalu Sabah, Malaysia
Dr. Norasma Dacho	Head, Marine Operations	Department of Fisheries Sabah Wisma Pertanian Sabah Jalan Tasik,Luyang Locked Bag 2049 88624 Kota Kinabalu Sabah, Malaysia
Ms. Nattana Simon	Fisheries Officer/Secretariat Sulu-Sulawesi Marine Ecoregion	Department of Fisheries Sabah Wisma Pertanian Sabah Jalan Tasik,Luyang

Name	Designation	Address
		Locked Bag 2049 88624 Kota Kinabalu Sabah, Malaysia
Mr. Lawrence Kissol	Head Marine Resource Management Branch	Department of Fisheries Sa bah Wisma Pertanian Sabah Jalan Tasik,Luyang Locked Bag 2049 88624 Kota Kinabalu Sabah, Malaysia
Mr. Ernest Jinaut	Fisheries staff	Department of Fisheries Sa bah Wisma Pertanian Sabah Jalan Tasik,Luyang Locked Bag 2049 88624 Kota Kinabalu Sabah, Malaysia
Mr. Charles Francis	Fisheries assistant	Department of Fisheries, Sandakan
Mr. Azhar Kassim	Fisheries staff	Department of Fisheries, Tawau
Mr. Ibni Hassim Abdul Rajun	Fisheries assistant Officer-in-Charge	Department of Fisheries Semporna
Mr. Talip Hassan	Fisheries Assistant Officer-in-Charge	Department of Fisheries, Lahad Datu
Mr. Arsani Arsat	Director Masa Gemilang Deep Sea Fishing	Bandar Sabindo 91000 Tawau, Sabah
Ms. Maria David Edick	Assistant Secretary Coordinator of Malaysia BIMP-EAGA, Natural Resources Development Cluster	Ministry of Agriculture and Food Industry Wisma Pertanian Sabah Jalan Tasik,Luyang Locked Bag 2049 88624 Kota Kinabalu Sabah, Malaysia
Mr. Steven	Wide Growth Marine Product Sdn. Bhd.	Lot 38, Phase 1, SEDCO Light Industrial Estage Mile 21/2 North Road P. O. Box 99 90307 Sandakan, Sabah
	Madai Fish Processing Plant	Kunak
Dr. Saleem Mustafa	Director Borneo Marine Research Institute Universiti Malaysia Sabah	Sepangar Bay Kota Kinabalu, Sabah Malaysia
Dr. Bernadette Mabel Manjaji-Matsumoto	Lecturer, Borneo Marine Research Institute Universiti Malaysia Sabah	Sepangar Bay Kota Kinabalu, Sabah Malaysia
Dr. Nor Aieni Mokhtar	Director	Level 6, Block C4, Complex

Name	Designation	Address
	National Oceanography Directorate Ministry of Science, Technology, and Innovation	C Federal Government Administrative Centre 62662 Putrajaya Malaysia
Mr. Ibnu Baba	District Officer Semporna	Semporna Sabah
PHILIPPINES		
Arthur Panganiban, Jr.	Vice President for Research and Extension, Zamboanga State College of Marine Science and Technology	Fort Pilar Zamboanga City
Dr. Milavel D. Nazario	Acting President Zamboanga State College of Marine Science and Technology	Fort Pilar Zamboanga City
Felicidad H. Bompat	Public Information Officer Tugbungan Bularan Association	Tugbungan Zamboanga City
Godofredo T. Oliveria	Agricultural Technologist Office of the City Agriculturist Zamboanga City LGU	Tumaga Zamboanga City
Diosdado N. Palacat	City Agriculturist Office of the City Agriculturist Zamboanga City LGU	Tumaga Zamboanga City
Edgar B. Lim	Manager, Permex Producer and Exporter Corporation	Ayala Zamboanga City
Eugene Yap	Manager, YL Fishing Co., Inc. and, President, Southern Deep-sea Fishing Asso., Inc.	Ayala Zamboanga City
Roger V. de Sosa	Plant Manager Universal Canning, Inc.	Ayala Zamboanga City
Roberto A. Baylosis	Consultant of seven sardine fishing companies based in Zamboanga City and, former Executive Director Southern Deep-sea Fishing Asso., Inc.	Tetuan Zamboanga City
Francisco A. Cadiz, Jr.	Chief, Fisheries Licensing and Regulatory Division, Bureau of Fisheries and Aquatic Resources IX	R.T. Lim Boulevard Zamboanga City
Ahadulla S. Sajili	Chief, Fisheries Resource and Management Division, and Head, National Stock Assessment Program IX, Bureau of Fisheries and Aquatic Resources IX	R.T. Lim Boulevard Zamboanga City
Virgilio Alforque	Regional Director Bureau of Fisheries and Aquatic Resources IX	R.T. Lim Boulevard Zamboanga City
Engr. Ramon E. Saavedra	Chairman, Regional Agriculture and Fishery Council IX	Department of Agriculture General Vicente Alvarez St. Zamboanga City

Name	Designation	Address
Marina A. Rubio	Management and Information System Officer Office of the City Agriculturist Zamboanga City LGU	Tumaga Zamboanga City
Rolando Potenciano	Chief, Fisheries and Regulatory Services Division, Office of the City Agriculturist Zamboanga City LGU	Tumaga Zamboanga City
Romeo Alvarez	Agricultural Technologist Office of the City Agriculturist Zamboanga City LGU	Tumaga Zamboanga City
Conrad E. Sontillano	Project Evaluation Officer IV City Planning and Development Office Zamboanga City LGU	City Hall Zamboanga City
Bonifacio E. Albino	Administration Aid VI, National Statistical Coordination Board IX	City Proper Zamboanga City
Janet M. Lopez	Executive Director Mindanao Economic Development Council	4 th Floor, SSS Bldg. J.P. Laurel Ave. Davao City
Juliet B. Perez	Statistician II Municipal Fisheries Sub-section Fisheries Section Division Bureau of Agricultural Statistics	Ben-Lor Bldg. 1184 Quezon Avenue Quezon City
Jomari Penulian	Data Processor Fisheries Section Division Bureau of Agricultural Statistics	Ben-Lor Bldg. 1184 Quezon Avenue Quezon City
Romeo Trono	Country Director Conservation International - Philippines	6 Maalalahanin St. Teacher's Village Diliman, Quezon City
Filemon Romero	Tawi-Tawi Coordinator Coral Triangle Support Partnership World Wide Fund for Nature - Philippines	4th Floor, JBD Plaza #65 Mindanao Avenue Barangay Bagong Pag-asa Quezon City
Noel Barut	Interim Deputy Executive Director Bureau of Fisheries and Aquatic Resources - National Fisheries Research and Development Institute	940 Kayumanggi Bldg., Quezon Ave., Quezon City
Francisco Torres, Jr.	Technical Staff Bureau of Fisheries and Aquatic Resources - National Fisheries Research and Development Institute	940 Kayumanggi Bldg., Quezon Ave., Quezon City
Geronimo Silvestre	Chief of Party Fisheries Improved for Sustainable Harvest Project	18 th Floor, OMM CITRA Bldg. San Miguel Ave., Ortigas Center Pasig City
Dr. Porfirio Alino	Professor Marine Science Institute University of the Philippines	Velasquez Street University of the Philippines Diliman, Quezon City

Name	Designation	Address
Jose Villanueva	Head National Stock Assessment Program XI Bureau of Fisheries and Aquatic Resources XI	Magsaysay Ave., Davao City
George Campeon	Regional Director Bureau of Fisheries and Aquatic Resources XI	Magsaysay Ave. Davao City
Bernard C. Delute	Municipal Planning and Development Coordinator Don Marcelino LGU	Municipal Hall Don Marcelino Davao del Sur
Joseph C. Betinol	Barangay Chairman Barangay Kinanga Don Marcelino LGU	Poblacion, Barangay Kinanga Don Marcelino, Davao del Sur
Evelyn E. Gildore	Municipal Agriculturist Don Marcelino LGU	Municipal Hall, Don Marcelino Davao del Sur
Ally P. Fernandez	Agricultural Technologist Don Marcelino LGU	Municipal Hall, Don Marcelino Davao del Sur