



Southeast Asian Fisheries
Development Center



United Nations
Environment



Global Environment
Facility

Establishment and Operation of A Regional System of
Fisheries Refugia in the South China Sea and Gulf of Thailand

REPORT THE SECOND MEETING OF THE PROJECT STEERING COMMITTEE

MIRI, SARAWAK, MALAYSIA
5TH – 6TH NOVEMBER 2019



SEAFDEC/UNEP/GEF
Fisheries Refugia

DECEMBER 2019

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Adopted Report of the Meeting

1. OPENING OF THE MEETING

1 The 2nd Meeting of the Project Steering Committee for the SEAFDEC/UNEP/GEF Project on Establishment and Operation of a Regional System of Fisheries *Refugia* in the South China Sea and Gulf of Thailand was organized by the Project Coordinating Unit (PCU) in collaboration with the Department of Fisheries of Malaysia in Pullman Hotels and Resorts, Miri City, Sarawak, Malaysia from 5-6 November 2019. The Meeting was attended by all Project National Focal Point and all National Scientific and Technical Focal Point from 5 participating countries: Cambodia, Indonesia, Malaysia, Philippines, and Thailand, including Ms. Isabelle Vanderbeck: the project task manager from UNEP via skype; Ms. Malinee Smithrithee: the SEAFDEC Secretary-General, observers, meeting secretariat from Department of Fisheries Malaysia, the Project Director and staff of the Project Coordinating Unit (PCU).

1.1 KEYNOTE ADDRESS BY THE CURRENT PSC CHAIRPERSON (2018-2019)

2 Dr. Ngurah Nyoman Wiadnyana, provided a keynote address as Chairperson of Project Steering Committee for 2018-2019. He welcomed all participants to the meeting and expressed appreciation for supporting and collaborating with him as Chair of the PSC. He stressed that the meeting aimed to provide update on the project progress including addressing project issues and concerns, and hoped that the project would deliver good results to all participating countries. He pointed out the need to select new set of officers for the PSC2 meeting.

1.2 KEYNOTE ADDRESS BY SEAFDEC/SECRETARY-GENERAL

3 Ms. Malinee Smithrithee, the Secretary-General of SEAFDEC provided a keynote address as the project executing organization. She expressed appreciation to be invited to the PSC2 meeting. She noted the importance of coastal ecosystems in Southeast Asia, which are very productive and serves as breeding ground for fisheries resources. She noted that these resources declined over the years due to overfishing, destructive and illegal fishing practices, and environmental degradation. She pointed out the importance of SEAFDEC in the region, and partnership with UNEP to implement the fisheries *refugia* project. Ms. Malinee Smithrithee expressed appreciation to Malaysia for hosting the meeting and wished the meeting a fruitful discussion. Ms. Malinee Smithrithee statement appears as [Annex 1](#).

1.3 KEYNOTE ADDRESS BY UNEP/TASK MANAGER

4 Ms. Isabelle Vanderbeck, the Project Task Manager of the United Nations Environment Programme delivered her keynote statement. She apologized for her absence in the PSC2 meeting, mainly due to the new UN administrative system which affected the processing of travels. She expressed her appreciation to the documentation put forward by the PCU. She shared the results of the project implementation review which provided a nice summary of the project and noted the increase in the number of fisheries *refugia* from 14 to 15 sites. Ms. Isabelle Vanderbeck pointed out the upcoming midterm review and would like to discuss the arrangements with the PCU. She expressed her appreciation to Dr. Somboon Siriraksophon who had been championing and showcasing the fisheries *refugia* project in international conferences and noted that countries in other regions are adopting the approach. She thanked all the participants for coming to the meeting, and Malaysia for hosting the meeting.

1.4 OPENING ADDRESS ON BEHALF OF THE GOVERNMENT OF MALAYSIA

5 Dato' Dr. Bah Piyon Tan, Deputy Director General of Fisheries Department of Malaysia and concurrently the National Focal Point of the Fisheries *Refugia* Project delivered the welcome and opening remarks. He welcomed all the participants to Malaysia and thanked the PCU for choosing Miri as meeting venue. He stated the Miri is the second largest city of Sarawak, also known as oil city. He hoped that the participants will have the opportunity to see the *refugia* site during technical visit as well as experience the cultural diversity and hospitality of Malaysia. He stated that the tiger shrimp and spiny lobster are the two target species for Malaysia *refugia* sites and recognized the importance of fisheries *refugia* in sustainable fisheries resources, which is aligned with SDG 14. He expressed appreciation to UNEP/GEF and SEAFDEC for the support in setting up of center and awareness program. Dato Dr. Bah Piyon Tan pointed out that Malaysia has provided significant co-finance from the government budget and looked forward to further expanding the fisheries *refugia* sites as it is essential to fisheries management. He thanked the Department of Fisheries in Sarawak for hosting the meeting and hoped that the meeting objectives and goals will be achieved. His opening address is as [Annex 2](#).

1.5 INTRODUCTION OF MEMBERS

6 Dr. Ngurah Nyoman Wiadnyana, the current chairperson noted that there were a number of new members from member countries. He invited the participants to introduce themselves on a "tour de table" to the meeting. The list of participants is attached as [Annex 3](#) to this report.

2. ORGANISATION OF THE MEETING

2.1 DESIGNATION OF OFFICES

7 Dr. Somboon Siriraksophon, the Project Director, as Secretariat of the meeting, informed the meeting of the Rules of Procedure that allow for the election of a Chairperson, Vice-Chairperson, and Rapporteur to serve until the convening of the subsequent regular meeting of the Project Steering Committee. In this regard, the PSC shall elect a Chairperson and a Vice-Chairperson from amongst its members with responsibility for chairing each formal meeting of the Committee and for acting as Chairperson and Vice-Chairperson of any meetings convened during the subsequent inter-sessional period, in accordance with paragraph 3.3 of the TOR for PSC.

8 Dr. Somboon Siriraksophon informed the meeting that Dr. Ngurah Nyoman Wiadnyana from Indonesia and Mr. Hadil bin Rajali from Malaysia were elected as Chairperson and Vice Chairperson, respectively with Mr. Borja as Rapporteur for the year 2018-2019. The current chairperson, Dr. Ngurah Nyoman Wiadnyana opened the nomination process, all committee is requested to nominate a new Chairperson, Vice Chairperson and Rapporteur for 2019-2020. In this regard, the Philippines nominated Malaysia as Chairperson being the host country with Thailand nominating the Philippines as Vice-Chairperson, and Indonesia nominating Thailand as rapporteur of the PSC for the year 2019-2020.

9 After election process, Dr. Ngurah Nyoman Wiadnyana, based on the consensus, confirmed Dato Dr. Bah Piyon Tan from Malaysia as new Chairperson, Mr. Valeriano Borja from Philippines as Vice Chairperson, and Ms. Praulai Nootmorn from Thailand as Rapporteur. He invited the newly elected Chair and Vice Chairperson to chair the meeting.

2.2 ORGANIZATION OF THE WORK

10 The new Chairperson, Dato Dr. Bah Piyon Tan invited Dr. Somboon Siriraksophon, the Project Director to brief the participants on the administrative arrangements for the conduct of the meeting and the proposed organization of work. He informed that the meeting would be conducted in English and in plenary.

11 Dr. Somboon Siriraksophon also introduced the documentation available to the meeting by referring to [Annex 4](#). He informed the meeting that all of the working documents including information and working papers, and reference papers had been uploaded in advance of the meeting on the website (<https://fisheries-refugia.org/2nd-pscm/2nd-pscm-doc>).

3. ADOPTION OF THE MEETING AGENDA

12 The Chairperson, Dato Dr. Bah Piyon Tan invited the Project Director to introduce the Provisional Agenda prepared by the Project Coordinating Unit (PCU) for the meeting, and invited members to propose any amendments or additional items for consideration by the committee.

13 Dr. Somboon Siriraksophon presented the meeting agenda and noted the tight agenda and schedule of the meeting, with a long list of concerns to be discussed. Having no proposals or amendments, the meeting adopted the agenda, as contained in [Annex 5](#).

4. OPENING STATEMENTS ON BEHALF OF THE PARTICIPATING COUNTRIES

14 The Chairperson invited representative from each country participating in the project to give brief opening statements regarding their participation in the project.

15 Mr. Ouk Vibol, national focal point from Cambodia thanked Malaysia for the hospitality and hosting of the meeting. He reported that Cambodia plan to establish three fisheries *refugia* sites, and noted the government's approval of two *refugia* sites in Kep province for anchovy and blue swimming crab, and in Koh Kong province for Indo-pacific mackerel, but for the fishery *refugia* site in Kampot for grouper is still under the process due to the challenge with coastal development in the area. He stressed the government strong support to fisheries *refugia*, and noted several proclamations and articles related to fisheries *refugia* management included in the fisheries law. He mentioned that fisheries *refugia* is also included in the 10-year strategic plan for fishery conservation and management, which is one of the approaches in combating IUU. At provincial level, the project worked with governor on the establishment fisheries *refugia* board and management of fishery committees. He noted the commitment of the national and provincial governments to continue even after project completion. He again expressed appreciation to the Government of Malaysia for hosting the meeting and thanked UNEP and GEF for their support to Cambodia.

16 Dr. Joni Haryadi as the national focal point from Indonesia shared the accomplishments of the project after the signing of the Letter of Agreement. He mentioned the several meetings conducted to prepare project implementation such as registration of project under the agency for Marine and Fisheries Research and Human Resource, Ministry of Marine Affairs and Fisheries, preparation of standard operational plan, including coordination and collaboration meeting with different officials and ministries. He mentioned further the inception meeting that was organized to run the project in two sites covering two species, and expert meeting to gather valuable information and possibility to survey for the Bangka Belitung site and West Kalimantan site.

17 Ms. Prulai Nootmorn, national focal point from Thailand thanked the project on behalf of the Department of Fisheries for Thailand. She mentioned the progress made in the selected two sites in Trat for Indo-Pacific mackerel and in Bandon Bay for blue swimming crab. She noted the consultation

meeting on Indo-Pacific mackerel will be held in Trat in December. She noted that the blue swimming crab will gather data for the fishery improvement program will include the data on fishing area, distribution, and mapping of protected area site for blue swimming crab. She mentioned the available opportunity from FAO to use the fisheries *refugia* approach for juvenile species.

18 Mr. Joeren S. Yleana, national focal point from Philippines thanked the PCU for continually providing support to the Philippines. He mentioned the three fisheries *refugia* sites are located in Bolinao, Pangasinan for rabbit fish, Masinloc, Zambales for frigate tuna, and Coron, Palawan for fusilier. He stated that the Philippines through the BFAR and NFRDI continually provided co-finance of roughly 10 million pesos from 2017-2019 for the project for fisheries profiling of the 3 sites for the 3 species. He hoped that the 3 sites will be institutionalized in the form of local executive issuances, and that management plans will be formulated based on the fisheries profiles and results from stakeholder consultations. He announced that initial management plans have already been drafted.

19 Mr. Hadil bin Rajali, national scientific and technical focal point from Malaysia reported the progress of the project. He mentioned that by the middle of next year, they would come up with the exact fisheries *refugia* sites, subject to further consultation with stakeholders. He indicated the need to extend the project until 2021 to allow completion of project activities like passing of law to designating the area as fisheries *refugia* sites for tiger shrimps and spiny lobsters.

20 Dr. Somboon Siriraksophon informed the meeting on the status of the project in Viet Nam. He stated that Vietnam just signed the Letter of Intent (LOI) in May 2019, and that budget for 3rd quarter of 2019 has been transferred for project arrangements and implementation. However, he noted the need to get permission from the Government to approve the project and activity before implementation. He noted that Viet Nam plans to start the project in the 4th quarter of 2019.

5. REPORT OF THE CHAIRPERSON OF THE REGIONAL SCIENTIFIC AND TECHNICAL COMMITTEE

21 Mr. Valeriano M. Borja, Chairperson of the RSTC2, reported the results and highlights of the RSTC2 meeting organized in collaboration with the Fisheries Administration (FiA) in Kampot, Cambodia from 21-23 May 2019 as appear in [Annex 6](#).

22 After deliberation, the committee took note and adopted the RSTC2 meeting report

6. DISCUSSION ON NATIONAL AND REGIONAL PROGRAM

6.1 PROGRESS ON INDICATORS FOR MANAGEMENT OF FISHERIES REFUGIA

24 Dr. Somboon Siriraksophon presented the progress report on Indicators for management of fisheries *refugia*, resulting from the Regional Meeting organized by the SEAFDEC/PCU on 9-11 September 2019 in Bangkok, Thailand, as appears in [Annex 7](#). He highlighted the needs to design stress reduction and environmental state indicators for management of fisheries *refugia*. He stressed that the list of indicators for *refugia* management including standardized information and data collection procedures in support of longer-term operation of a regional system of fisheries *refugia* had been agreed in principle among the six participating countries, for further development in the Regional Guidebook which is expected to be completed for finalization by the next PSC in 2020.

25 The Chairperson, Dato Dr. Bah Piyon Tan invited the committee to review and comment on the list of indicators and standardized procedures and contents, including the ways forward for further

development of the Regional Guidebook, and encouraged the committee to adopt the report of the Regional Meeting.

26 Participating countries expressed appreciation on the development of the draft guidebook. Some concerns were raised by participating countries such as the need to work and report on the indicators; the inclusion of other areas and mechanisms such as the South China Sea and ASEAN; Inclusion and refinement of figures in terms of percentages; and possibility of having set of indicators specific to countries.

27 Dr. Somboon Siriraksophon clarified that the regional guidebook was developed to guide countries how to continue management fisheries *refugia* once project ends. The countries can select and follow as many of the indicators, but no need to report. He noted that the project intent to bring the guidebook for consideration, support and endorsement under the ASEAN-SEAFDEC mechanism. He also stressed that the countries will be further consulted during the RSTC3 in February 2020 for finalization.

28 Ms. Isabelle Vanderbeck noted that if the guidebook will be endorsed by ASEAN, it will be a major achievement of the project, especially if elevated into a wider region not only to participating countries but to other SEAFDEC member countries.

29 After deliberation, the committee agreed on the indicators and procedures on *refugia* management including the further development of the Regional Guidebook. The committee also adopted the Regional Meeting report.

6.2 REGIONAL PLAN OF ACTION FOR SUSTAINABLE MANAGEMENT OF TRANSBOUNDARY SPECIES: *Rastrelliger brachysoma*, INDO-PACIFIC MACKEREL

30 Dr. Somboon Siriraksophon presented the Report of the Regional Consultative Meeting (RCM) on Regional Action Plan (RAP) for Management of Transboundary Species, *Rastrelliger brachysoma* in the Gulf of Thailand Sub-region as appears in [Annex 8](#), and the draft Regional Action Plan for management of *R. brachysoma* as appears in [Annex 9](#), for consideration and adoption by the committee.

31 Participating countries supported the development of the regional action plan. Countries however expressed their concerns such as inclusion of other concerned countries in the action plan; application to other small pelagic species; data collection; the roles and responsibilities of institutions, among others.

32 Dr. Somboon Siriraksophon clarified that other country could use and implement using the regional action plan, and noted that the regional action plan will be brought under the ASEAN-SEAFDEC mechanism, and noted that need to prepare the way forward for the finalization of the action plan.

33 After deliberation, the committee adopted the report of the regional consultation meeting and the Regional Action Plan for *R. brachysoma*, subject to consideration of the comments from participating countries.

6.3 OCEAN MODELLING

34 Dr. Somboon Siriraksophon introduced the output of the regional program on development of the Ocean Modelling in the SCS and GoT regions to provide physical oceanographic conditions in relation to ocean circulation that support the establishment of fisheries refugia in participating

countries as appears in [Annex 10](#). He informed the committee that IOC-WESTPAC has developed and updated the ocean modelling and provided such services to public users for almost a decade now.

35 In this connection and to avoid duplicating similar efforts, Dr. Somboon Siriraksophon informed the committee on the cancellation of the project's development of Ocean Modelling activity, and instead focus on strengthening cooperation and partnership with IOC-WESTPAC. He requested the committee to reallocate the budget for Ocean Modelling to other regional activities.

36 Discussions focused on the possibility of using the budget and resources to complete the guidebook indicators; the circulation model of the species; and the development of regional action plan for other species, among others. Dr. Somboon Siriraksophon noted and considered the suggested possible uses of the resources. He informed the meeting that countries will be invited in the next RSTC3, and will invite experts to discuss this.

37 After deliberation, the committee adopted the request from SEAFDEC/PCU for reallocation of Ocean Modelling budget to other regional activities which will be identified later.

6.4 WORKPLAN FOR REGIONAL WORKS ON BEST PRACTICES OF FISHING GEARS AND METHODS

38 Dr. Somboon Siriraksophon presented the workplan for the promotion and demonstration of the best practice fishing gears and methods to reduce the impacts and challenges on inshore fishing pressures caused by the use of destructive fishing gear and practices. He pointed out that this issue has been raised by the PCU at the RSTC2 in Kampot, Cambodia where the RSTC for Cambodia requested the PCU to study the impacts of elongated collapsible Trap fishery in Kep on fisheries resources and habitats that link to the fisheries *refugia* site. He also stated that the results from the study would support and benefit the local government in the management of fisheries and habitat resources. He invited the committee to provide comments and endorse the tentative workplan.

39 After deliberation, the committee endorsed and adopted the revised workplan as appears in [Annex 11](#).

6.5 KNOWLEDGE ATTITUDE AND PRACTICES

40 Dr. Somboon Siriraksophon briefed on the introduction and objectives of the concept on Knowledge Attitude and Practices (KAP) as appears in [Annex 12](#). He pointed out the suggestions of participating countries of the need to promote for better understanding of the general public of the achievements of the *refugia* project at regional and national levels through development of media presentations or short films which is aligned with KAP concept.

41 Participating countries informed the meeting of the various means to promote the project such as development of documentation films; organizing special events and lecture series, national and local consultations, among others. Dr. Somboon Siriraksophon, noting the many activities implemented at country level, suggested to compile all documentations for showcasing in international forum.

42 Ms. Vanderbeck stressed the importance of documenting the KAP of communities on fisheries *refugia* approach, at the beginning, half way through execution and at the end of the project implementation, as to document through videos and other forms of communications change in attitude and practice as a result of project execution. She noted that documenting change of attitude and working relationship between the environment and fisheries ministries would be key too. She informed the meeting that the fisheries *refugia* approach in this region has already influenced fisheries practices in Africa and America, thanks to the leadership of project and SEAFDEC.

43 The committee took note and considered the application of KAP concept to show the results/achievements of the project in the form of presentation/film. The committee requested the participating countries to document and share all KAP information and materials to PCU for showcasing during international conferences.

6.6 OTHER MATTER

44 Mr. Ouk Vibol inquired and requested the PCU on the possibility of having an activity for information and lessons learned sharing of best practices for transboundary management among the country or project partners using the national activity budget. Dr. Somboon Siriraksophon noted and would look into the request of country on this matter.

7. FINANCIAL AND BUDGETARY MATTERS

7.1 EXPENDITURE REPORT AS OF 30 SEPTEMBER 2019

45 Dr. Somboon Siriraksophon informed the committee on the total cumulative expenditures as of 30 September 2019 which was USD 997,620.67 as appears in [Annex 13](#). He also informed that the cumulative unspent balance was about two third of a total GEF Fund.

46 The Committee took note on the expenditures as of 30 September 2019 and the overspent amount in budget line 5300 on sundry. After discussion, the committee endorsed the expenditure report.

7.2 CONSIDERATION OF THE CO-FINANCING AS OF 30 SEPTEMBER 2019

47 Dr. Somboon Siriraksophon presented the Co-finance from participating countries and SEAFDEC as of 30 June 2019 as appears in the [Annex 14](#). He reported that SEAFDEC has provided about 1.5 million USD co-finance, while all four participating countries namely Cambodia, Malaysia, Philippines and Thailand provided 2.2 million USD co-finance. He noted that Indonesia and Viet Nam joined the project implementation in the 3rd Quarter of 2019.

48 Malaysia inquired if there is a ruling in terms of co-finance ratio among GEF and participating countries including SEAFDEC. Dr. Somboon Siriraksophon clarified that there is a rule on co-finance ratio of 1:4 that is being followed by the project.

49 After clarification, the committee endorsed the co-finance report as of 30 June 2019.

7.3 PROPOSED OPERATIONAL BUDGET FOR 2020

50 Dr. Somboon Siriraksophon presented the estimation of costed implementation plan for 2020 that was provided by participating countries and the PCU as appears in [Annex 15](#). He pointed out and referred to the proposed budget for 2020 where the estimated total expenditures by 2020 will be about 55-60% of the total GEF Fund, taking into account the project end by 2020.

51 Participating countries indicated on the need to revise/amend their estimated costed implementation plan for 2020 to include additional activities such as research and data gathering. Dr. Somboon Siriraksophon clarified that project funds is not enough to support such activities, and instead suggested using the country co-finance contribution.

52 After discussion, the committee noted and endorsed in principle the estimation costed implementation plan for 2020, taking into consideration the estimation cost for Indonesia and Vietnam

7.4 CONSIDERATION OF THE PROPOSED PROJECT EXTENSION WITH NO COST

53 Dr. Somboon Siriraksophon informed the meeting on proposed project extension with no additional cost from donor. He noted the 14 months remaining before the project ends on 31 December 2020, and the reasons and issues for the no-cost extension such as late project implementation in Indonesia and Vietnam which started only in the 3rd and 4th quarter of 2019, and the estimated expenditures by end of 2020 is about 55-60% of a total GEF Fund. He also stated that the overall budget remaining as of 30 Sept is about two third of the total budget approved.

54 Dato Dr. Bah Piyon Tan invited the committee to provide their opinion and comments on the proposed project extension with no cost. Participating countries expressed the need to extend the project for 1-2 years, considering the various delays experienced by most of the countries such as local elections, changes of leaderships, completion of ongoing activities, and late project start up in some countries, among others.

55 Ms. Vanderbeck stressed that the proposed project extension has to be cleared and validated by the Project Steering Committee, clearly stating the use of available resources and the extension period, otherwise the proposed extension has no value for UNEP. She further suggested to perhaps over extend to ensure adequate synchrony between the national activities under extension and the regional components and to allow the project to complete all its tasks including reporting and capturing of best practices and project learning.

56 After discussion, the Committee agreed in principle for a project extension for 1-2 years subject to recalculation of project budget, and requested the PCU to recalculate the budget especially for the regional component and PCU, for circulation to participating countries.

7.5 PROPOSED BUDGET REVISION

57 Dr. Somboon Siriraksophon informed the Committee on the urgent need for budget revisions due to the overspent amounts under Budget Lines 4100 (Expendable Equipment), BL 4300 (Premise), BL 5100 (Operation and Maintenance), and BL 5400 (Sundry) as appears in [Annex 16](#). He noted that the Fund Manager of UNEP/GEF in Nairobi suggested to revise to budget to cover all overspent amounts plus anticipated additional expenses. He stressed that before additional funds could be released, the overspent should be cleared first. He, therefore requested the committee to take note and endorse the first revision of project budget. However, Malaysia requested the committee to consider the second budget revision. Dr. Somboon Siriraksophon noted the request and suggested to merge their second budget revision to the overall extension budget revision.

58 After discussion, the Committee endorsed the 1st budget revision for consideration and approval by UNEP, taking into account the proposed project extension.

7.6 CONSIDERATION OF THE FINANCIAL AUDIT REPORT FOR 2016-2018

59 Dr. Somboon Siriraksophon requested Mr. Reynaldo Molina of the Project Coordinating Unit to present the status of financial audit report submission for 2016-2018. Mr. Molina noted that participating countries submitted audit reports of their financial statements for 2017-2018 while SEAFDEC submitted the audit report of consolidated financial statements for 2016-2018 that combines

all countries including the Project Coordinating Unit as appears in [Annex 17](#). He informed the meeting that most of the participating countries including SEAFDEC combined and submitted their audit reports beyond due date, i.e. by 31 March. Mr. Reynaldo Molina requested all participating countries and SEAFDEC to take note of the audit report submission date as per Letter of Agreement and advised them to take the necessary action to avoid delays in the submission of financial audit reports in the future.

60 The committee took note of the audit report status and requested participating countries to take the necessary action to submit audit reports on time.

7.7 REQUEST FOR THE FINANCIAL AUDIT OF 2019

61 Dr. Somboon Siriraksophon informed the meeting and reminded all participating countries for the submission of annual audited financial report for the year 2019 to the PCU by 31 March 2020, which will be consolidated into one audited financial report, and submitted to UNEP before 30 June 2020.

62 He noted that some of the submitted audited financial reports did not include the required template of financial statements. He therefore informed the participating countries to include the templates in the 2019 audit report as appears in [Annex 18](#).

63 The committee noted the need for the financial statement templates and encouraged participating countries to use and include the templates in the 2019 audit reports.

7.8 OTHER MATTER

64 Dr. Somboon Siriraksophon informed the meeting on list and expenditures for non-expandable equipment since the project started in 2016 to date as of 30 September 2019 as appears in [Annex 19](#). He requested the committee to consider and endorse the list of non-expendable equipment including the 2020 proposed budget by countries and PCU.

65 Ms. Isabelle Vanderbeck clarified that the list and inventory has to be prepared and submitted by end of year annually. She stated that since the end of year is near, countries have to do their inventory and submit to PCU before the year ends.

66 The committee noted and endorsed the list and expenditures of non-expendable equipment including 2020 proposed budget, subject to the inputs from countries and PCU, and encouraged participating countries to submit their inventory listing before the year ends.

8. ANY OTHER BUSINESS

8.1 GCF PROJECT ON IMPROVING HEALTHY OCEAN ECOSYSTEMS THROUGH BEST PRACTICES IN TRAWL FISHERIES

67 Dr. Somboon Siriraksophon on behalf of SEAFDEC and UNEP presented the draft concept proposal entitled “Improving Healthy Ocean Ecosystems through Best Practices in Trawl Fisheries” appears as [Annex 20](#) for consideration and comments by the committee. He pointed out the draft concept proposal was developed under the Small Scale Funding Agreement (SSFA) between the UN Environment Programme and the Southeast Asian Fisheries Development Center (SEAFDEC), in consultation with all relevant countries, to address the problem of fish trawling in the South China Sea, for submission to the either Green Climate Fund (GCF) or Global Environment Facility (GEF) for funding.

He invited the committee to give comments and directions in the further development of the concept proposal.

68 Ms. Isabelle Vanderbeck clarified that the concept proposal aims to address fishery trawling as well as climate issues in the region. She stressed that for the project to proceed, participating countries have to agree and provide their comments on the draft concept proposal, which would then be revised and placed in the GCF format. She stated that each country through their National Designated Authority would have to endorse and make formal request to UNEP, who could intervene on behalf of the participating countries. She further stated that GCF now looks into regional intervention and could consider the South China Sea and Gulf of Thailand as possible areas, with some advantage due to the presence of the Strategic Action Programme.

69 Most of the participating countries including SEAFDEC supported the concept and provided their comments to PCU. However, Indonesia informed that current regulation on prohibition of trawl fisheries is still enforced, and suggested to include new references about the impact of trawl fisheries in the project concept. SEAFDEC saw the proposal manageable and useful to member countries, subject to adjustments of components/activities. They stressed the need to have more involvement and discussion in the formulation of the concept especially if it will follow and fall under the ASEAN-SEAFDEC mechanism. The Philippines supported the concept particularly the first three components as it will support the country's program on sustainable demersal fisheries. Thailand suggested to conduct gap analysis.

70 After discussion, the committee agreed to support the concept subject to further improvement/adjustment taking into consideration the comments of countries and SEAFDEC.

8.2 RESULTS OF THE 21ST LMEs FOR SUSTAINABLE DEVELOPMENT IN SUPPORT OF THE AGENDA 2030

71 Dr. Somboon Siriraksophon introduced the results of the LME21 meeting for sustainable development in support of the Agenda 2013, which aimed to build the LME partnership and arrangement where partners agree to cooperate and collaborate to advance their mutual interests by sharing ownership, as well as the responsibility for managing LME, and engage in defining and solving respective problems, and exploring sustainable development opportunities. He stressed that the South China Sea is one of the 66 Large Marine Ecosystems (LMEs) identified around the world, and is also one of seventeen LMEs participating in GEF/LMEs Projects.

72 The meeting noted the LME21 results as appears in [Annex 21](#) including the progress in the implementation of the Strategic Action Program for the South China Sea LMEs and its contribution to the SDG-14 target as presented by Dr. Somboon Siriraksophon.

8.3 RESULTS OF THE TWENTY-FOURTH INTERGOVERNMENTAL MEETING OF THE COORDINATING BODY ON THE SEAS OF EAST ASIA (COBSEA)

73 Dr. Somboon Siriraksophon presented on behalf of UNEP on the results of the 24th Intergovernmental Meeting of the Coordinating Body on the Seas of East Asia (COBSEA) as appears in [Annex 22](#). He introduced COBSEA and presented the link and involvement of COBSEA with the Fisheries *Refugia* and South China Sea projects.

74 The meeting noted the results of the 24IGM particularly the revision and adoption of the revised COBSEA Regional Action Plan on Marine Litter (RAP MALL) including discussion on activities

carried out in the context of the action plan, and the establishment of a COBSEA Regional Activity Centre, to be hosted by the Republic of Indonesia.

8.4 ASEAN-SEAFDEC FORUMS IN 2019-2020

75 Dr. Somboon Siriraksophon presented the list of the ASEAN-SEAFDEC forum and required actions during the last quarter of 2019 to end of 2020 as appears in [Annex 23](#). He stated that since the Fisheries *Refugia* project was involved in the development of the Regional Action Plan on management of transboundary species, the committee should be informed with of the ASEAN-SEAFDEC activities.

76 After the presentation, the committee endorsed the list and required actions as presented by Dr. Somboon Siriraksophon.

8.5 OTHER MATTER

77 Dr. Somboon Siriraksophon informed the meeting of the postponement of the 3rd RSTC meeting from September 2019 to February 2020, as agreed in principle by the Regional Scientific and Technical Committee. The committee endorsed the postponement of the 3rd RSTC meeting.

9. DATE AND PLACE OF THE NEXT MEETING OF THE PROJECT STEERING COMMITTEE

78 Dr. Somboon Siriraksophon informed the meeting that the next 3rd PSC meeting will have to be tentatively in late November or early December 2020. The participating countries recommended and agreed to have the next meeting in Coron, Palawan, Philippines. The PCU will consult with the host country on the schedule of the meeting and inform all committee members via e-mail, at least three months before the meeting.

10. TECHNICAL SITE VISITS

79 All participants visited and observed the fisheries *refugia* sites for tiger prawn (*Penaeus monodon*) in Kuala Baram, Miri. The Location for juvenile and post-larvae of *P. monodon* has been identified in the Pasu river. The live cycle of *P. Monodon* in this area is shown as factsheet in [Annex 24](#). In addition, all participants also sightseeing to the Niah National Park and Niah Cave until 14:30.

11. ADOPTION OF THE REPORT OF THE MEETING

80 The rapporteur, Ms. Prulai Nootmorn, presented the draft report prepared by the PCU, which was considered, amended, and adopted by the committee as it appears in this document.

12. CLOSURE OF THE MEETING

81 The Chairperson expressed his appreciation to all committee for active intervention, he also thanked to the PCU and Ms. Isabelle Vanderbeck behalf of DOF of Malaysia for support taking into accounts the meeting covered all important aspects in the agenda. He also mentioned since he will retire in March 2020, the DOF/My will nominate a new national Focal Point to continue this important program, Finally, he wishes the project will be achieved and contribute to all participating country and to the region a significant outcomes of a regional system of fisheries *refugia*.

82 Dr. Somboon Siriraksophon expressed his attitude sincere thanks on behalf of the SEAFDEC/PCU to the Chairperson, Dato Dr. Bah Piyan Tan and all committee for their valuable comments and adoption of the report. He also thanked to the Department of Fisheries of Malaysia for hosting and excellent arrangement not only at the meeting venue but at site visit.

83 There being no further business the Chairperson closed the meeting at 18:20.

ANNEX 1: KEYNOTE ADDRESS BY SEAFDEC/SECRETARY-GENERAL

- Dato' Dr. Bah Piyon Tan, Deputy Director-General of the Department of Fisheries Malaysia and concurrently the National Focal Point for Malaysia on the SEAFDEC/UNEP/GEF Fisheries Refugia Project;
- All Project Steering Committee from 6 participating countries;
- UNEP Project Task Manager: Madame Isabelle Vanderbeck
- My colleagues from SEAFDEC and the PCU;
- Observers;
- Ladies and Gentlemen
- Good morning,

It is my privilege and pleasure to be here to give a Keynote address on behalf of the SEAFDEC executing agency and the Project Coordinating Unit at this 2st Meeting of the Project Steering Committee under the SEAFDEC/UNEP/GEF Project on Establishment and Operation of a Regional System of Fisheries Refugia in the South China Sea and Gulf of Thailand.

As you are already aware of, the coastal waters of Southeast Asia were blessed with highly productive fisheries resources because of the rich ecosystems such as dense mangrove forests and vast sea grass beds sustained by rich effluents of nutrients from land, as well as extensive coral reefs with clean tropical sea environment. These areas are critical to a broad range of aquatic organisms during their life cycle from breeding, spawning, nursing and growing. These areas also host the feeding zones of aquatic species that are economically important and serve as important sources of recruitment of a wide diversity of fisheries resources.

However, we are also aware that most of the commercially important fisheries resources in the region have declined due to many factors that include overfishing, illegal fishing, rampant use of destructive fishing practices, and environmental degradation. In the such conditions, the breeding, nursery and feeding areas of many aquatic species such as fishes, crustaceans, and mollusks could also be destroyed and finally lost. Taking into accounts above concerns, the concept of fisheries refugia was developed, as a novel approach to integrate fisheries and habitat management in the context of high and increasing levels of small-scale fishing pressure in the Southeast Asia.

Colleagues, Ladies and Gentlemen, SEAFDEC has been the technical arm to support the ASEAN Member States for more than 5 decades to ensure the sustainability of fisheries and aquaculture in Southeast Asia. Recently, we are also the UNEP partnership to support the Strategic Action Program for the SCS through the implementation of fisheries refugia. We assure you that we will continue our efforts to create more activities and programs under the UNEP/GEF Funding.

Lastly, I would like to express my deepest appreciation to Department of Fisheries, Malaysia for hosting and excellent preparation to the meeting. I also wish we will have fruitful discussions and fruitful results and achievements of this 2nd Project Steering Committee Meeting.

Thank you very much

ANNEX 2: OPENING ADDRESS BY DEPUTY DIRECTOR-GENERAL OF DOF MALAYSIA

Selamat Datang and Welcome to Malaysia! The Government of Malaysia is very pleased to host The 2nd Meeting of the Project Steering Committee for the SEAFDEC/UNEP/GEF Project on Establishment and Operation of a Regional System of Fisheries Refugia in the South China Sea and Gulf of Thailand at Miri, Sarawak. It is our pleasure to gather all, here in Miri, the second largest city in Sarawak and one of our fisheries refugia site is located here. You will have the opportunity to see the site tomorrow during our technical visit. I hope you will enjoy your stay in Miri as everyone says Malaysia is Truly Asia. You will see that it's one country where you will find culturally diverse people and experience the best of what Asia has to offer. Don't forget to explore, eat, shop and most of all, enjoy your stay here and experience our Malaysian hospitality.

On the establishment of fisheries refugia in the South China Sea, Malaysia is very delighted to be part of this project since 20th June 2017 and has identified two (2) sites namely tiger shrimps in Kuala Baram, Sarawak and spiny lobsters in Tanjung Leman, Johor. The Government of Malaysia recognises the importance of refugia in the sustainable fisheries resource management and working along to be aligned with SDG Target 14. Therefore, many activities have been carried out by the Department of Fisheries Malaysia specifically setting up two (2) Refugia Information Centres, awareness programs and consultations with the relevant stakeholders.

On the behalf of Government of Malaysia, I would like to thank SEAFDEC and UNEP/GEF for their continuous support and assistance towards the implementation of the project. Starting from 2018, the Government of Malaysia has received USD 125,646.58 till Q4 of 2019 from UNEP/GEF. In addition, Malaysia provides co-finance for this project through the government's management and development budget. Malaysia is looking forward to establish the two (2) identified successfully and would like to extend the concept to other potential sites as it is very beneficial for the resource management. Thank you

ANNEX 3: LIST OF PARTICIPANTS

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ANNEX 4: LIST OF WORKING DOCUMENTS, INFORMATION AND REFERENCES

INFORMATION PAPERS	
SEAFDEC/UNEP/GEF/FR-PSC.2-inf.1	INFORMATION NOTE FOR PARTICIPANTS
SEAFDEC/UNEP/GEF/FR-PSC.2-inf.2a	PROVISIONAL PROSPECTUS
SEAFDEC/UNEP/GEF/FR-PSC.2-inf.2b	PROVISIONAL AGENDA AND TIMETABLE
SEAFDEC/UNEP/GEF/FR-PSC.2-inf.2c	ANNOTATED AGENDA
SEAFDEC/UNEP/GEF/FR-PSC.2-inf.3	LIST OF PARTICIPANTS
SEAFDEC/UNEP/GEF/FR-PSC.2-inf.4	LIST OF DOCUMENTS, INFORMATION AND REFERENCES
SEAFDEC/UNEP/GEF/FR-PSC.2-inf.5a	KEYNOTE ADDRESS BY PSC CHAIRPERSON (2018-2019)
SEAFDEC/UNEP/GEF/FR-PSC.2-inf.5b	KEYNOTE ADDRESS BY SEAFDEC/SEC
SEAFDEC/UNEP/GEF/FR-PSC.2-inf.5c	KEYNOTE ADDRESS BY UNEP PROJECT TASK MANAGER
SEAFDEC/UNEP/GEF/FR-PSC.2-inf.5d	WELCOME AND OPENING ADDRESS BY DOF/MALAYSIA
WORKING PAPERS	
SEAFDEC/UNEP/GEF/FR-PSC.2-wp.1	REPORT OF THE CHAIRPERSON OF THE REGIONAL SCIENTIFIC AND TECHNICAL COMMITTEE
SEAFDEC/UNEP/GEF/FR-PSC.2-wp.2	PROGRESS ON INDICATORS FOR MANAGEMENT OF FISHERIES REFUGIA
SEAFDEC/UNEP/GEF/FR-PSC.2-wp.3	REGIONAL PLAN OF ACTION FOR SUSTAINABLE MANAGEMENT OF TRANSBOUNDARY SPECIES: SHORT MACKEREL
SEAFDEC/UNEP/GEF/FR-PSC.2-wp.4	OCEAN MODELLING
SEAFDEC/UNEP/GEF/FR-PSC.2-wp.5	WORKPLAN FOR REGIONAL WORKS ON BEST PRACTICES OF FISHING GEARS AND METHODS
SEAFDEC/UNEP/GEF/FR-PSC.2-wp.6	KNOWLEDGE ATTITUDE AND PRACTICES
SEAFDEC/UNEP/GEF/FR-PSC.2-wp.7	EXPENDITURE REPORT AS OF 30 SEPTEMBER 2019
SEAFDEC/UNEP/GEF/FR-PSC.2-wp.8	CONSIDERATION OF THE CO-FINANING AS OF 30 JUN. 2019
SEAFDEC/UNEP/GEF/FR-PSC.2-wp.9	PROPOSED OPERATIONAL BUDGET FOR 2020

SEAFDEC/UNEP/GEF/FR-PSC.2-wp.10	CONSIDERATION OF THE PROPOSED PROJECT EXTENSION WITH NO COST
SEAFDEC/UNEP/GEF/FR-PSC.2-wp.11	PROPOSED BUDGET REVISION
SEAFDEC/UNEP/GEF/FR-PSC.2-wp.12	CONSIDERATION OF THE FINANCIAL AUDIT REPORT FOR 2016-2018
SEAFDEC/UNEP/GEF/FR-PSC.2-wp.13	REQUEST FOR THE FINANCIAL AUDIT OF 2019
SEAFDEC/UNEP/GEF/FR-PSC.2-wp.14	NONE-EXPENDABLE EQUIPMENT
SEAFDEC/UNEP/GEF/FR-PSC.2-wp.15	GCF PROJECT ON IMPROVING HEALTHY OCEAN ECOSYSTEMS THROUGH BEST PRACTICES IN TRAWL FISHERIES
SEAFDEC/UNEP/GEF/FR-PSC.2-wp.16	RESULTS OF THE 21ST LMEs FOR SUSTAINABLE DEVELOPMENT IN SUPPORT OF THE AGENDA 2030
SEAFDEC/UNEP/GEF/FR-PSC.2-wp.17	RESULTS OF THE TWENTY-FOURTH INTERGOVERNMENTAL MEETING OF THE COORDINATING BODY ON THE SEAS OF EAST ASIA (COBSEA)
SEAFDEC/UNEP/GEF/FR-PSC.2-wp.18	ASEAN-SEAFDEC FORUMS IN 2019-2020
SEAFDEC/UNEP/GEF/FR-PSC.2-wp.19	ADOPTED REPORT OF THE PSC2

REFERENCE PAPERS	
SEAFDEC/UNEP/GEF/FR-PSC.2-Ref.1	REPORT OF THE 1 ST MEETING OF THE PROJECT STEERING COMMITTEE
SEAFDEC/UNEP/GEF/FR-PSC.2-Ref.2	REPORT OF THE 2 ND MEETING OF THE REGIONAL SCIENTIFIC AND TECHNICAL COMMITTEE
SEAFDEC/UNEP/GEF/FR-PSC.2-Ref.3	ADOPTED TERM OF REFERENCE OF THE PROJECT STEERING COMMITTEE
SEAFDEC/UNEP/GEF/FR-PSC.2-Ref.4	TEMPLATE: COSTED IMPLEMENTATION PLAN FOR 2020
SEAFDEC/UNEP/GEF/FR-PSC.2-Ref.5	TEMPLATE FOR SUMMARY OF PROJECT ACTIVITIES AND CALCULATION OF ACTIVITIES-BASED COFINANCE
SEAFDEC/UNEP/GEF/FR-PSC.2-Ref.6	LIST OF CHAIRPERSONS AT REGIONAL COMMITTEE MEETINGS

ANNEX 5: AGENDA AND TIMETABLE

DATE/TIME	AGENDA
DAY 1: TUESDAY 5TH, NOVEMBER 2019	
08:30-09:00	REGISTRATION
09:00-09:20	AGENDA 1: OPENING OF THE MEETING 1.1 KEYNOTE ADDRESS BY THE CURRENT PSC CHAIRPERSON (2018-2019) 1.2 KEYNOTE ADDRESS BY SEAFDEC/SECRETARY-GENERAL 1.3 KEYNOTE ADDRESS BY UNEP/TASK MANAGER 1.4 WELCOME AND OPENING ADDRESS ON BEHALF OF THE GOVERNMENT OF MALAYSIA 1.5 INTRODUCTION OF MEMBERS
09:20-09:35	AGENDA 2: ORGANISATION OF THE MEETING 2.1 DESIGNATION OF OFFICES 2.2 ORGANIZATION OF THE WORK
09:35-09:45	AGENDA 3: ADOPTION OF THE MEETING AGENDA
09:45-10:00	AGENDA 4: OPENING STATEMENTS ON BEHALF OF THE PARTICIPATING COUNTRIES
10:00-10:30	BREAK NETWORKING
10:30-11:00	AGENDA 5: REPORT OF THE CHAIRPERSON OF THE REGIONAL SCIENTIFIC AND TECHNICAL COMMITTEE
11:00-12:00	AGENDA 6: DISCUSSION ON NATIONAL AND REGIONAL PROGRAM 6.1 PROGRESS ON INDICATORS FOR MANAGEMENT OF FISHERIES REFUGIA 6.2 REGIONAL PLAN OF ACTION FOR SUSTAINABLE MANAGEMENT OF TRANSBOUNDARY SPECIES: SHORT MACKEREL 6.3 OCEAN MODELLING 6.4 WORKPLAN FOR REGIONAL WORKS ON BEST PRACTICES OF FISHING GEARS AND METHODS 6.5 KNOWLEDGE ATTITUDE AND PRACTICES 6.6. OTHER MATTER
12:00-13:30	LUNCH BREAK
13:30-15:30	AGENDA 7: FINANCIAL AND BUDGETARY MATTERS 7.1 EXPENDITURE REPORT AS OF 30 SEPTEMBER 2019 7.2 CONSIDERATION OF THE CO-FINANING AS OF 30 JUNE 2019 7.3 COSTED IMPLEMENTATION PLAN FOR 2020 7.4 CONSIDERDATION OF THE PROPOSED PROJECT EXTENSION WITH NO COST

	<p>7.5 PROPOSED BUDGET REVISION</p> <p>7.6. CONSIDERATION OF THE FINANCIAL AUDIT REPORT FOR 2016-2018</p> <p>7.7 REQUEST FOR THE FINANCIAL AUDIT OF 2019</p> <p>7.8. NONE-EXPENDABLE EQUIPMENT</p> <p>7.9. OTHERS</p>
15:30-15:45	BREAK NET WORKING
15:45-16:30	<p>AGENDA 8: ANY OTHER BUSINESS</p> <p>8.1 GCF PROJECT ON IMPROVING HEALTHY OCEAN ECOSYSTEMS THROUGH BEST PRACTICES IN TRAWL FISHERIES</p> <p>8.2 RESULTS OF THE 21ST LMEs FOR SUSTAINABLE DEVELOPMENT IN SUPPORT OF THE AGENDA 2030</p> <p>8.3 RESULTS OF THE TWENTY-FOURTH INTERGOVERNMENTAL MEETING OF THE COORDINATING BODY ON THE SEAS OF EAST ASIA (COBSEA)</p> <p>8.4 ASEAN-SEAFDEC FORUMS IN 2019-2020</p> <p>8.5 POSTPONEMENT OF THE 3RD RSTC TO FEBRUARY 2020</p> <p>8.6 OTHER MATTER</p>
16:30-16:45	AGENDA 9: DATE AND PLACE OF THE NEXT MEETING OF THE PROJECT STEERING COMMITTEE
18:30-21:00	WELCOME RECEPTION
DAY 2: WEDNESDAY 6TH, NOVEMBER 2019	
08:00-12:30	AGENDA 10: TECHNICAL SITE VISITS
12:30-13:30	LUNCH
16:00-18:30	AGENDA 11: ADOPTION OF THE REPORT OF THE MEETING
18:30-18:45	AGENDA 12: CLOSURE OF THE MEETING

ANNEX 6: REPORT OF THE CHAIRPERSON OF THE 2ND MEETING OF THE REGIONAL SCIENTIFIC AND TECHNICAL COMMITTEE

I. Executive Summary

The 2nd Meeting of the Regional Scientific and Technical Committee was organized with the support from Fisheries Administration (FiA) of Cambodia at Thansur Sokha Hotel, Kampot Province, Cambodia on 21 – 23 May 2019. Mr. Valeriano M. Borja, a National Scientific and Technical Focal Point from the Philippines was nominated and served as a chairperson of the meeting. The adopted meeting agenda consisted of several issues e.g. the progress works at national and regional programs, project evaluation of the National Activity from 2017 to May 2019 in response to the questionnaires from SEAFDEC/PCU, data and information need to support the project implementation including biological study and management of transboundary species for short mackerel and frigate tunas, best practices fishing gears and methods, GIS mapping and existing ocean modelling, and baseline survey data. The meeting also progressed and shared the lesson learned on information and education program that covered the issues on regional project websites and template for national web portal, the good lesson learned from Malaysia on establishment of the Fisheries Refugia Learning Center, development of the regional fisheries refugia database and awareness building program.

The recommendations from the meeting for consideration at the PSC2 are summarized as follows:

1. Taking into accounts the progress of country's implementation, the meeting noted that the number of proposed fisheries refugia sites for Indonesia and Viet Nam although the project budget was prepared for 3 refugia sites in both countries, however Indonesia confirmed to implement two refugia sites in their country. In this connection, a total of fisheries refugia sites in all six country partners is 15 refugia sites including 3 sites in each for Cambodia, Philippines and Viet Nam, and 2 sites in each for Indonesia, Malaysia, and Thailand.

2. Cambodia informed the meeting on hiring a consultant for development of extension media to support the public awareness using the budget of Q3 and Q4/2019.

3. On the larval fish identification study made by Chulalongkorn University under technical support from the PCU to FiA/Cambodia, the results show the correlation between short mackerel and phytoplankton in Koh Kong Province. In this connection, the PCU was requested to continue support the work study made by Cambodia.

4. On the management of transboundary species particular the short mackerel, the recommendations for future works are as follows:

- Stock Assessment study in Cambodia, Malaysia and Viet Nam;
- Monitor the change of tidal Sea Surface Temperature which is affected to migratory pattern of short mackerel;
- Monitor larvae transportation in relation to the current movement;
- Ocean simulation: chlorophyll A concentration, temperature, salinity, and etc.;
- Biological and physical study;
- Conduct the Stock assessment using the existing framework established under the ASEAN Mechanism: Scientific Working Group for Stock Assessment for Neritic tuna and small pelagic fishes;
- Establishment of database for short mackerel in sub-region or region;
- Regional cooperation for development of action/management plan;
- Study of distribution and abundance of zooplankton, diatoms, copepod, etc. In addition;

5. The recommendations for future works on frigate tunas are summarized as follows:

- Conduct the regional assessment of frigate tuna to understanding the migratory route;
- Seeking the Small Grant Program (SGP) Fund and other sources to support the activities;
- Identify data needs;
- Biological study and genetic study.

6. On the best practices fishing gears and methods were addressed by the PCU in collaboration with SEAFDEC/TD with aims to solve problems and challenges on inshore fishing pressures caused by the use of destructive fishing gear and practices, such as the operation of demersal trawls and push nets in seagrass areas, and the detonation of explosives in coral reef areas. The meeting was informed by the PCU on the proposed actions based on the FAO technical guidelines for responsible fisheries volume 4 Suppl.2. In addition, the best practices of fishing gears and methods developed by SEAFDEC are demonstrated. In this connection, the PCU will further communicate with country for demonstration in the refugia sites. This work will address again for consideration and support by the PCS2.

7. On the development of the Ocean modeling system to support information and data for establishment of fisheries refugia by country, the PCU requested a researcher from Thailand-China Joint Laboratory for Climate and Marine Ecosystem, Representative from Department of Marine and Coastal Resources (DMCR) Thailand to introduce the Ocean Forecasting System under the IOC/Westpac framework which provides outputs in five parameters; i.e., wind, wave height, sea level, current and temperature, the last two of which are in 21 layers. Regarding this, one of the regional program of fisheries refugia project is to hire a consultant to develop the Ocean modeling system for the project. However, most of the data and information are public domain provided by the IOC/Westpac, and the modeling system has been developed and updated. The PCU, therefore consulted with RSTC2 to cooperate with the DMCR rather than spend the fund for duplicated work. The meeting supported the proposed from PCU. And This matter will be addressed again for approval by the PSC2.

8. On the Baseline Survey Data which aims to emphasize the importance of baseline study and baseline data to support, monitor, and evaluate the project implementation at national levels. The PCU pointed out that baseline study and baseline data should be designed in alignment with the identified key deliverable and benchmarks for the project as shown in the Appendix 4 of the Project Document. In connection to this, the PCU also pointed out that three issues are needed linked such as data inputs for the website, existing baseline survey data conducted by countries, and the database system within the data menu of the website. The PCU therefore proposes to further discuss this matter at the next RSTC3. In addition, before the RSTC3, the PCU will circulate the questionnaires on data requirements for consideration and inputs.

9. With regard to the Project Website and National Web-portal the meeting agreed that the national webpage for fisheries refugia will be developed by countries themselves. However, each country is requested to link their countries' web portals under the regional website.

10. The meeting discussed types of awareness building and promotional materials of fisheries refugia project such as: extension media for promotion of fisheries refugia; establishment of the education/information center at sites, public either for private or public institutions including aquarium/museum; documentary filming for target species; series of Cartoon Books for promotion fisheries refugia; stickers for social communication/media; Posters: Radio news and billboard. The meeting also agreed that country could come up with their own way to develop media or promotional materials for promotion and build the awareness to specific stakeholders to understand the Refugia concept. However, the PCU requests country to share those materials or media for consideration where appropriate could be shared to other countries.

11. Before end of the meeting, Viet Nam is requested to host the next RSTC3 as agreed at the 1st RSTC, the PCU will further discuss with D-Fish as a National Lead Agency for finalize the venue and will inform the RSTC at least 2 months before the meeting.

II. REQUIRED ACTION BY THE PSC

- The committee is welcomed to provide comments on the issues discussed at the RSTC2 and advise to PCU on specific issues to be included in the RSTC.
 - The Committee is also requested to adopt the report of the RSTC2;
-

ANNEX 7: REPORT OF THE REGIONAL MEETING ON INDICATORS FOR FISHERIES REFUGIA MANAGEMENT

A-one The Royal Cruise Hotel, Pattaya City, Chonburi Province, Thailand
9th – 11th September 2019

EXECUTIVE SUMMARY

Design of stress reduction and environmental state indicators for management of fisheries refugia is one of the regional activities needs under the SEAFDEC/UNEP/GEF Project on Establishment and Operation of a Regional System of Fisheries Refugia in the South China Sea and Gulf of Thailand. In response to this, the SEAFDEC/Project Coordinating Unit (PCU) with the supports from national focal point and national scientific and technical focal point from each country worked together through the brainstorming discussion on identification and finalization of the list of indicators for refugia management (as **Appendix 1**) and establishment including standardized information and data collection procedures in support of longer-term operation of a regional system of fisheries refugia established by relevant member countries. It is also expected that this regional Guidebook will be valuable to guide not only among ASEAN Member States but also other region countries to establish and manage fisheries refugia to enhance fish stock for sustainable utilization. The PCU will further develop a complete guidebook for finalization by the next PSC in 2020.



REQUIRED ACTION BY THE PSC

The Committee is requested to provide comments on the draft of Indicator list appeared in the report for further action by the PCU.

Appendix 1

RESULTS OF THE BRAINSTROMING SESSION ON INDICATORS FOR LONG TERM MANAGEMENT OF FISHERIES *REFUGIA*

1) OBJECTIVES

- a. Maintain the fish stock and critical habitat;
- b. Satisfy fishing community, social needs now and futures; and
- c. Put in place on effective management system

2) INDICATORS FOR MANAGEMENT OF FISHERIES *REFUGIA*

Dimensions	Sub-dimensions	Criteria	Indicators
1) Ecosystem	Fisheries Resources	Abundance stock / Distribution / Fishing Effort	Biomass Estimation (ton)
			Level of MSY (ton)
			Level of MEY (ton)
			Level of CPUE (Kg/...)
			CPUA (Kg/Area)
			Catch landing (ton or Kg)
		Biological Parameter	Length at first capture (Lc)
			Length at first mature (Lm)
			Sex ratio
			Spawning Potential Ratio
			Length frequency
			Exploitation rate
			GSI (Gonadosomatic Index)
		Species composition / Catch structure	Percentage of dominance species
			Number of species
			% Main economic/commercial species
			Percentage of Bycatch

Dimensions	Sub-dimensions	Criteria	Indicators		
	Habitat (mangrove, coral, seagrass, and other critical habitats)	Healthy/ condition/ Area	Size Coverage (Percent)		
			Healthy Index		
			Target habitat density (IUCN reference)		
	Environment (Impact from human act.)	Pollution	Eutrophication	Standard Water Quality (e.g. COD, BOD)	
				Phytoplankton Abundance	
		Anthropogenic (Human activity)	Erosion	Phosphate, Nitrate Concentration (Nutrient loading)	
				Coastal reclamation area	
				Level of maritime activity (If appropriated)	
					Level and distribution of sedimentation
					Loss of area/habitat

Dimensions	Sub-dimensions	Criteria	Indicators
2) Social	Livelihoods	Choice of Occupation	Number of option/ Occupation/ work (Alternative, Permanent work, Subsistence work)
		Fish consumption	Fish consumption per capita per year
		Nutrition	% animal protein (if appropriate)
	Stakeholder Participation (Indigenous People, Gender, etc.)	Participation	Ratio of Number of participations (gender and IP)
		Local Organization	Number of organizations,
			Number of Best practices applied
		Networking	Number of networking
			Type /way of direct or indirect communication
	Education (Local knowledge, Local wisdom)	Awareness program (e.g. information center, information education campaign (IEC))	Number of agreements
			Number of information center or similar.
			Number of consultations
			Number of best practices
			Number of awareness program
Capacity building	Number of understanding by stakeholder		
		Number of training/Extension	

3) Economic	Economic Condition (to community)	Poverty incident	Poverty Index
		Capital accessibility	Number of financial accessible
		Income	Income per household
	Fisheries Production, Fishing Efforts	<i>Contribution of target species / Availability</i>	Value of contribution/production
	Innovative Fisheries Technology	Effectiveness fishing gear	level of CPUE
		Cost effectiveness	Cost reduction, time, human power
		Environment friendly (Green technology)	Reduce of fuel consumption
			Reduce bycatch
		Investment	Number of investment (for e.g. fishing fleet, processing, ship builder, management tools/software, etc.)
		New domestic product	

Dimensions	Sub-dimensions	Criteria	Indicators
4. Governance	Fisheries management policy (Fishing/User Right, Precautionary approaches/Science-based management, and Synergistic Way/Strategy)	Legal framework	Number of law and regulation
		Harvest strategy/ Limit of fishing effort	Fishing close, (area and seasonal closure, Zoning)
			Number of Input control (Number, mesh size, length of fishing gear, Licensing control, Capacity (e.g. Gross tonnage, horsepower, etc.))
			Number of output control (TAC, Quota, Target species)
		Fisheries management plan/ strategy/ framework	Available/not available
			Management plan of Fisheries <i>refugia</i> in place, Habitat rehabilitation, protection and stock enhancement.
	Efficiency fishing gear	Length limit (e.g. crab fishery)	
	Stakeholder Cooperation/Coordination (Regional / national levels)	Management mechanism	Management board/ committee, transboundary committee, RPOA for <i>refugia</i> in place
			Linkage to the existing management/conservation framework (e.g. MPAs)

	Enforcement	Coordination mechanism	Inter-agency coordination in place, Number of joint operations
		Fishery Law enforcement	Level of enforcement
			Frequency of regular patrol
	Capacity Building	Best Practice	Adoption of best practice in place
		Maritime policy and regulation/ International policy	Number of training/workshops
	Funding (Infrastructure, Enforcement, etc.)	Sustainability	Long term commitment of Government on finance
		Source of funding (incentive, soft loan, donation/CSR)	Number of donors
			Type of funds
		incentive	Type of incentive
			Number of activities
		Number of best practices	

Dimensions	Sub-dimensions	Criteria	Indicators
5) Climate Change and Disaster	Fish Stock	Impact to Fish Stock	Availability/levels of knowledge abundance, distribution, genetic diversity, recruitment
			Update information impact to fish stock
	Impact to Habitat	Coral bleaching	Area
			Incident/ frequency
			Recovery Rate
		Destruction of mangrove	Area coverage
			Recovery Rate
		Destruction of sea grass	Area coverage
		Recovery Rate	
	Impact to Environment	Sea level rise	Saline intrusion
			Mean sea level annual
			Coastal Erosion (Area)

		Physical/chemical parameters (T, Salinity, PH, DO)	Level of physical and chemical parameters
		Precipitation (rainfall)	Level of Precipitation
		Ocean acidification	PH level

ANNEX 1: REPORT REGIONAL CONSULTATIVE MEETING ON REGIONAL ACTION PLAN FOR MANAGEMENT OF TRANSBOUNDARY SPECIES: *RASTRELLIGER BRACHYSOMA* IN THE GULF OF THAILAND SUB-REGION

Bay Beach Resort, Jomtien, Chonburi Province, Thailand
12th – 13th September 2019

EXECUTIVE SUMMARY

Under the SEAFDEC/UNEP/GEF Project on Establishment and Operation of a Regional System of Fisheries Refugia in the South China Sea and Gulf of Thailand (Fishery Refugia), the transboundary areas for *R. brachysoma* has been addressed particularly in the border between Thailand and Cambodia, and Cambodia and Viet Nam. The best practices and action plan for management of this transboundary species has been addressed at many SEAFDEC forum since 2008 implied the needs to ensure that the *R. brachysoma* are sustain able harvested through the sub-regional cooperation. For example, the Expert Group Meeting organized by SEAFDEC in December 2018 suggested to follow up and actions at national and regional level including carry out research necessary on *R. brachysoma*, monitoring (data collection), and control (specific measure and legislation) that linkage to Fisheries Refugia concept requirements. Accordingly, the Technical Consultative Meeting for Drafting of the Regional Action Plan for Management of Transboundary Species: Indo-Pacific Mackerel (*Rastrilliger brachysoma*) in the Gulf of Thailand (GOT) Sub-Region co-organized by the SEAFDEC-Sweden and SEAFDEC/UNEP/GEF Project on Establishment and Operation of Regional System of Fisheries Refugia in the South China Sea and Gulf of Thailand (Fishery Refugia) was convened in Chonburi Province, Thailand from 12-13 September 2019. The Meeting was attended by representatives from Cambodia, Indonesia, Malaysia, Philippines, Thailand and Vietnam, officers from SEAFDEC Secretariat and Training Department (TD), members of Regional Fisheries Policy Network (RFPN), expert from Sweden and Burapha University. The Regional Action Plan for Management of transboundary species, *R. brachysoma* in the GoT Sub-region was agreed (**appendix 2**). It is expected the Regional Action Plan will guide relevant ASEAN Member States the effective fisheries management of the *R. brachysoma* for sustainable utilization in the Gulf of Thailand Sub-region and other regional sea in the Southeast Asia.

REQUIRED ACTION BY THE PSC

- The Committee is requested to provide comments on the draft of RAP-short mackerel
- The relevant countries are also requested to support this Regional Action Plan for endorsement under the ASEAN-SEAFDEC mechanism.

Appendix 2

REGIONAL ACTION PLAN FOR MANAGEMENT OF TRANSBOUNDARY SPECIES: INDO-PACIFIC MACKEREL IN THE GULF OF THAILAND SUB-REGION¹

SEAFDEC

I. INTRODUCTION

Mackerels (Family Scombridae) particularly the Indo-Pacific mackerel (*Rastrelliger brachysoma*), also known as short mackerel, are among the most economically important small pelagic fishes in the Southeast Asian region, contributing to approximately 38% of the region's total small pelagic fisheries production or 11% of total capture fisheries production in 2010. Comparing among several Mackerel species, in 2016 Indo-Pacific mackerel contributed to 78% of the total Mackerel production with the average price of 1,492 USD/MT, decreasing from the production reported in 2015. (SEAFDEC, 2018).

On the production of Indo-Pacific mackerel by countries, Indonesia was the major producer in the region, reporting the highest production at 283,106 MT in 2016, followed by Philippines at 38,339 MT (SEAFDEC, 2018). As for Thailand, the Mackerel production was not segregated by species, but the total production of all Mackerel species was reported to be 81,017 MT. Nevertheless, it could be observed that the country's total Mackerel production in 2016 had drastically reduced from those of 194,845 MT in 2012. Similar to Thailand, Philippines also reported the declining trends in its Mackerel production through the period (SEAFDEC, 2018).

The Gulf of Thailand Sub-region (GoT) is one of the important ecosystems for Indo-Pacific mackerel, where the peak of highest catch using purse seine and falling net was reported in 1996 at 328,955 MT; while low catch was reported during 3 periods, in 1999, 2005 and 2010 at 289,285 MT, 283,984 MT and 259,354.56 MT, respectively, and the catch has never reached 300,000 MT as recorded in 1996 again (SEAFDEC, 2018).

In general, the species was caught by various types of fishing gears in the GoT; and the three major types recorded in 2008 were purse seines (45%), driftnets (31%), trawls (18%). The landings show declining trends indicating that the mackerel stocks in the South China Sea and GoT were already overexploited. For instance, in 2016, Thailand reported the catch production of Indo-Pacific mackerel by 3 main fishing gears, purse seine at 3,008 MT, trap at 691.6 MT, and trawl at 630.3 MT (SEAFDEC, 2018).

II. STOCK STATUS OF *R. BRACHYSOMA*

Indo-Pacific mackerel is considerable inexpensive but contains high protein, making the species popular for consumption in the Southeast Asian countries such as Cambodia, Indonesia, Thailand, Malaysia, etc. However, with drastic increase in the production of canned mackerels to replace the decreasing sardines, the catch of Indo-Pacific mackerel has recently been declining as a result of overfishing and unregulated fishing operations in several countries. Such situation has become a great concern by countries in the Southeast Asian region.

A number of fish species including mackerels were reported to be in the overexploitation state in the Gulf of Thailand (Puthy, 2007). In his study using the Schaefer and Fox models, the result indicated that mackerel stocks are both biologically and economically overexploited, but there were still opportunities to increase the mackerel stocks by reducing fishing efforts which would allow the stocks to recover.

¹ Developed during the Technical Consultative Meeting on Drafting of the Regional Action Plan for Management of Transboundary Species Indo-Pacific Mackerel in the Gulf of Thailand Sub-region, 12-13 September 2019, Thailand

Thailand also reported that the species was under overexploitation state throughout the past years. The species also had changing population patterns, which could be due to the environmental impacts. Furthermore, distribution of fish larvae could also be influenced by changes in phytoplankton, water current, and temperature (SEAFDEC, 2017).

In Indonesian waters, over-exploitation of pelagic fishery resources, including Indo-Pacific mackerel has been highlighted in Java Sea and other Indonesian waters; however, the recent population dynamic study by Zamroni, A.& Ernawati, T. (2019) showed that Indo-Pacific mackerels in Northern Coast Java of Indonesia water was still under fully exploitation state, and the recruitment process has not been disturbed. Although the species has yet to reached the heavily exploitation state, suggestion was made that fishing efforts should be reduced; while fishing permits, such as number of units, size of fishing fleet, fishing gear dimensions, and fishing technology pressure, should also be controlled. Nevertheless, due to limited biological information of Indo-Pacific mackerel, genetic diversity study of the species including in Java Island was conducted (Indaryanto *et al.* 2015).

Meanwhile, the declining of Indo-Pacific mackerel due to changes in environmental condition and water quality, and modification and loss of critical habitats, has been documented in several countries and reported by the media.

III. ISSUES, KNOWLEDGE GAPS, AND CHALLENGES

Based on the reviews and inputs from six Southeast Asian countries, namely Cambodia, Indonesia, Malaysia, Philippines, Thailand, and Viet Nam, in response to SEAFDEC questionnaires in September 2019, the issues, knowledge gaps and challenges for sustainable utilization of Indo-Pacific mackerel could be summarized as follows:

3.1) Data and Information

- Insufficient landing data, biological data collection for population and abundance study
- No current information of migratory route, spawning ground and season for a whole life cycle
- No regular monitor data collection on capture production

3.2) Understanding the Status of Fish Stock

- Lack of the knowledge on stock structure (need on DNA study)
- Insufficient stock status of *R brachysoma* (distribution and abundance)
- Insufficient information on Population dynamics (Growth parameters, mortalities and relationship to other regional stock)
- No Actual effort to exploit the resources
- Trans-boundary distributions
- Lack of knowledge on how to assessment Multi-fishing gears to harvest

3.3) Management Responses

- No Fisheries Management Plan
- No information on existing and effectiveness of regulations
- No co-management schemes/arrangements
- No transboundary management mechanism/plan
- No information on Effects/Loss to IUU fishing
- No database or software for Assessment
- No Traceability system using electronic logbook
- support the Sustainable management concept, Co-management, and EAFM

3.4) Awareness Building

- Educate people and student in fisheries communities
- Distribute brochures or any media to promote of fisheries management

- Raise awareness of both small-scale fishers and commercial fishers
- Sharing of the findings to both policy management level and fishermen
- develop consultation among researchers, managers and stakeholders (EAFM)
- to support the Sustainable management concept, Co-management, and EAFM

3.5) Strengthen Regional Cooperation

- Standardization on data collection for regional stock assessment
- Data sharing
- Lack of management body
- Develop the transboundary management mechanism/plan (same as 3.3)

3.6) Study the Environment Impact

- Temporary disappear of short mackerel in the Gulf of Thailand
- impact of climate change to fish migration route

3.7) Enhance Capacity Building

- Inadequate knowledge on research works as follows:
 - Species identification of small size (juvenile) and larval fishes
 - otolith (to know age of fish)
 - Data collection at landing sites: catch and biological data
 - Data analysis
 - Stock Assessment and modeling for stock assessment
- Fishing gear technology

IV. REQUIRED REGIONAL COOPERATION FOR TRANSBOUNDARY SPECIES

Since 1953, Thailand undertook several management actions for Indo-Pacific mackerel stock. From 1953 to 2015, several studies were conducted, and 13 Notifications were released in relation to closure of fishing area in the Gulf of Thailand with the objective of conserving the spawning grounds and nursery stages of aquatic resources (Saikliang 2016). Thailand also undertook several studies to enhance knowledge on migration patterns of Indo-Pacific mackerel within the country's EEZ in the Gulf of Thailand. The country's efforts for effective fisheries management for Indo-Pacific mackerel were continued up to the present.

Although information on migration patterns of Indo-Pacific mackerel within the country's EEZ in Gulf of Thailand sub-region is already available for almost 30 years. However, the recent result from genetic analysis of Indo-Pacific mackerel using individual assignment and mixed-stock analysis shows the contradictory migratory behavior of the species between the stock in the inner Gulf of Thailand and the stock in the eastern part of the Gulf of Thailand (Kongseng, et al, 2020). Additionally, the population from Pattani Province may also migrates across eastern Gulf of Thailand through southern part of Viet Nam and Cambodia waters. Such results indicated that Indo-Pacific mackerel is transboundary species and joint management cooperation at the regional or sub-regional levels among countries that harvested Indo-Pacific mackerel is necessary for sustainable management of the species.

V. PROVISIONS OF THE REGIONAL ACTION PLAN FOR MANAGEMENT OF TRANSBOUNDARY INDO-PACIFIC MACKEREL

There are a number of international instruments aiming at conservation and management of marine resources, *e.g.* the 1982 United Nations Convention on the Law of the Sea (UNCLOS), the United Nations Fish Stock Agreement (UNFSA), and the UN Sustainable Development Goal (SDG) 14. These instruments also support initiatives in combating of illegal fishing towards sustainable use of seas and marine resources, as well as to enhance the environmental, economic and social well-being of coastal fishers and communities. At the regional level, the ASEAN-SEAFDEC Resolution and Plan of Action on Sustainable Fisheries for Food Security for the ASEAN Region adopted by the ASEAN-SEAFDEC Member Countries in 2001 and 2011 also specified the importance of establishing and implementing effective fisheries management through ecosystems approach by integrating habitat and fisheries resources and increasing social and economic benefit to all stakeholders, and applying knowledge/science-based development and management of fisheries.

Recognizing the needs to strengthen cooperative efforts among countries toward sustainable utilization of the marine resources particularly the Indo-Pacific mackerel that is important transboundary resource in the Gulf of Thailand, SEAFDEC with the funding support from the Government of Sweden through the SEAFDEC-Sweden Project on “Fisheries and Habitat Management, Climate Change and Social Well-being in Southeast Asia” and the SEAFDEC/UNEP/GEF Project on “Establishment and Operation of a Regional System of Fisheries *Refugia* in the South China Sea and Gulf of Thailand (Fisheries *Refugia*)” therefore facilitated discussion among the Gulf of Thailand countries to develop the Regional Action Plan (RAP) for Management of Indo-Pacific mackerel. The RAP contains five Sections, namely:

Section 1: Introduction;

Section 2: Stock Status of Indo-Pacific mackerel;

Section 3: Issues, Knowledge Gaps and Challenges;

Section 4: Required Regional Cooperation for Management of Transboundary Species; and

Section 5: Provisions of the RAP including goal, outcomes, objectives and actions.

The Provisions of RAP were categorized into 5 dimensions, which are: 1) Governance; 2) Social; 3) Economic, 4) Ecosystem; and 5) Climate Change; and these were aligned with the concept of the Ecosystem Approach to Fisheries Management (EAFM).

This RAP for Management of Indo-Pacific mackerel is a non-legal binding document that is meant to serve as a foundation to identify practices and processes that support the implementation of the relevant ASEAN-SEAFDEC Resolution and Plan of Action. It marks an evolutionary step towards concerted regional approach to support countries’ efforts to manage this transboundary fish stock in the Gulf of Thailand.

5.1 THE GOAL OF REGIONAL ACTION PLAN

This RAP is intended to serve as guide for concerned countries in implementing actions to achieve the goal of “***Sustainable Indo-Pacific mackerel fisheries in the Gulf of Thailand sub-region through science-based management for shared benefit to other ASEAN Member States by 2030.***”

5.2 EXPECTED OUTCOMES

- i. Healthy Indo-Pacific mackerel resources through the implementation of fishery management plan in the Gulf of Thailand
- ii. Accurate and comprehensive information on Indo-Pacific mackerel in the Gulf of Thailand
- iii. Model for development of management plan for Indo-Pacific mackerel that could be applicable to other sub-regions

5.3 ACTIONS

A) GOVERNANCE DIMENSION			
<p>Overall Objective: Regional/sub regional fisheries management mechanism are in place building upon national regulations and management scheme</p> <p>Specific Objectives</p> <p>A1. Fisheries management mechanism developed and approved (including fisheries management plan and arrangement, the effective of regulation)</p> <p>A2. Data management system are enhanced and considered regional/sub-regional standardization data management system in place</p> <p>A3. Standard for assessing fishing effort large, medium and small-scale fishery agreed</p> <p>A4. Understandings on national law and management schemes within the sub-regional are communicated and applied</p> <p>A5. Impact of unregulated and unreported fishing assessed</p> <p>A6. Catch documentation system applied as a tool to improve traceability of the short mackerel fishery</p>			
Knowledge Gaps/Issues	Actions	Ref.	Responsibility
Insufficient catch and landing data	Develop the SOP/technical guidance for data collection (including catch data, biological data)	A2	SEAFDEC University Government agency
	To further develop catch documentation	A2	Fishery research institute
	Harmonization/standardized on data collection and develop database system	A2	
Insufficient biological data collection	Conduct capacity building program for data collection to enumerator and scientist, researchers	A3	SEAFDEC University Government agency
	Conduct time series data collection with standardized method	A3	Fishery research institute

Insufficient Fishing effort (include commercial and small scale)	Link to the catch documentation include commercial and small-scale fishery (as available)	A4	Government and Private sector
	Regular monitor data collection on fishing effort capture production (include commercial and small scale)	A4	
Fisheries Management Mechanism (including fisheries management plan and arrangement, the effective of regulation)	Develop fisheries management plan for short mackerel at national and sub-regional level	A1	SEAFDEC University Government agency Fishery research institute All stakeholder (fishers, others)
	Establish regional cooperation on monitoring, control and surveillance	A1	Existing national MCS partners/network
	Raise awareness of both small-scale fishers and commercial-scale fishers <ul style="list-style-type: none"> ○ Policy and regulations ○ Management measures ○ Sustainable utilization ○ Involvement the participation, considering gender sensitivity 	A1	SEAFDEC University Government agency Fishery research institute All stakeholder
	Promote stakeholder consultation among researchers, managers and stakeholders using EAFM	A1	SEAFDEC University Government agency Fishery research institute All stakeholder International organizations (FAO, NOAA, etc)
	Conduct habitat rehabilitation and stock enhancement programs	A1	SEAFDEC University Government agency Fishery research institute All stakeholder
Understanding national law and regulations	Comparative review of national law and regulations	A5	Government and resource person

	Disseminate knowledge and information on the conservation and management of Indo-pacific mackerel to fisheries communities and students	A5	Government Other stakeholders
Flexibility of regulation to respond to science advise	Encourage periodic evaluation of policy and regulation	A1	Government
Management schemes/arrangements including transboundary aspects.	Develop management schemes/arrangements at sub-regional area including transboundary aspects	A1	SEAFDEC University Government agency
	Support establishment of regional cooperation/management mechanism (non-legal binding and scientific advisory committee)	A1	Fishery research institute All stakeholders
Illegal, Unregulated and Unreported Fishing	Assessing the impact of Illegal, Unregulated and Unreported Fishing	A6	Government and resource person
	Strengthen the Monitoring, Control and Surveillance network against the illegal fishing (none legal binding)	A6	Inter-agencies coordination
Traceability system for fish and fishery product (using electronic logbook, etc)	Develop the catch documentation that suitable for traceability system e.g. electronic logbook, etc	A6	Government and resource person

B) SOCIAL DIMENSION			
Overall Objective: Social responsibility and involvement in fisheries management achieved			
Specific Objectives			
B1. Understanding the social condition of people involving in fishery at local and national level.			
B2. Increase participation and involvement of stakeholder in various level.			
B3. Resolve conflict on land and resource use			
B4. Build awareness and capacity in all level			
Knowledge Gaps/Issues	Actions	Ref.	Responsibility
Social and economic at local and national level	Conduct a baseline survey based on available information on social and economic at local and national level (S)	B1	Government University
Traditional fishing (indigenous knowledge and social responsibility)	Improve and disseminate the best practice to other (indigenous people)	B1	Government
People engagement in fishery activity (include small scale fishery and large scale/commercial fishery, processing)	Conduct stakeholder analysis for understanding the important and influence of stakeholder in various level	B2	Government University
People engagement in policy making (fisherfolk organization, academy, private sector,	Promote Public Private Partnership	B2	Government
	Promote multi stakeholder engagement in policy making	B2	Government and relevant stakeholder
Social structure (community small scale and large scale, gender, migrant labor, and fisher)	Encourage gender equality based on understanding of social structure in community	B2	Government and relevant stakeholder
Conflict on land and resource use	Promote stakeholder consultation	B3	Government and relevant stakeholder
	Promote marine spatial planning and coastal zone management	B3	Government Resource person Relevant stakeholder

Awareness Raising	<p>Distribute brochures or any media (e.g. digital media) to promote fisheries management and regulations</p> <p>Capacity building and experts exchange</p> <p>Fishing gear technology for eco-friendly (Reduce bycatch, cost and expenditures)</p>	B4	<p>SEAFDEC</p> <p>Government</p> <p>Relevant stakeholder</p>
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C) ECONOMIC DIMENSION

Overall Objective: Equal distribution of economic benefit, economic return and employment opportunities

Specific Objectives:

- C1. Ensure the national government and private sector commitment for long-term funding and support.
- C2. Understanding the structure and ownership of asset within fishing industry (large, medium and small scale).
- C3. Maximized economic benefit return for management response and reduced unequal distribution.

Knowledge Gaps/Issues	Actions	Ref.	Responsibility
Funding	To ensure the national government commitment for long-term funding and support	C1	Government Private sector
	Explore various potential donor	C1	Funding agency/donor
	Promote capital access through micro finance scheme	C1	
	Promote corporate social responsibility	C1	
Structure and ownership of asset within the fishing industry (large and small scale)	Review structure and ownership of asset within the fishing industry (large, medium and small scale) for management responses	C2	Government Resource person
Benefit and economic return and unequal distribution	Assess benefit and economic return throughout the value chain	C3	Government Resource person
Increase of cost (fuel and other inputs)	To ensure the fuel and other input exist for local fishermen	C3	Government
Fisheries employment revenue	To create the alternative work	C3	Government Private Sector
	Require the contract among people engage in fishing	C3	Relevant stakeholder

D) ECOSYSTEM DIMENSION

Overall Objective: Maintain healthy ecosystem for the wellbeing of short mackerel resources

Specific Objectives

D1. Understand current status and improve the knowledge of short mackerel resources for scientific based management

D2. Understand various habitats of short mackerel throughout its life cycle

Knowledge Gaps/Issues	Actions	Ref.	Responsibility
Migratory route	Update, further define and confirm the migratory route at national, sub-regional or regional area	D2	Fisheries Agencies, National Research Institutions, Regional Institutions
	Conduct tagging program, e-DNA, DNA	D1	Fisheries Agencies, Research Institutions
Spawning and nursery grounds (including dispersion and distribution of fish larvae)	Conduct comprehensive larvae survey (e.g. ichthyoplankton)	D1	Fisheries Agencies, Research Institutions
	Study on critical habitats	D2	Fisheries Agencies, Research Institutions,
Seasonal changes	Conduct comprehensive larvae survey (e.g. ichthyoplankton)	D1	Fisheries Agencies, Research Institutions, SEAFDEC
	Conduct reproductive biology study	D1	Fisheries Agencies, Research Institutions, SEAFDEC
Physical and chemical oceanographic conditions and ocean circulation	Conduct oceanography survey	D2	Fisheries Agencies, Research Institutions, SEAFDEC
	Develop oceanographic modelling	D2	Fisheries Agencies,

			Research Institutions, IOC/WESTPAC
	Conduct satellite imagery (GIS, remote sensing) analysis	D2	Fisheries Agencies, Research Institutions
Stock structure	Conduct DNA study, otolith, tagging, etc.	D1	Fisheries Agencies, Research Institutions, SEAFDEC
Stock status at national and regional of <i>R. brachysoma</i> (distribution and abundance)	Conduct stock assessment at national, sub-regional or regional level	D1	Fisheries Agencies, Research Institutions, SEAFDEC
	Share data, information and findings from scientific research to relevant stakeholders	D1	Fisheries Agencies, Research Institutions, SEAFDEC
	Standardized data collection for regional stock assessment	D1	Fisheries Agencies, Research Institutions, SEAFDEC
	Develop modeling for stock assessment	D1	Fisheries Agencies, Research Institutions, SEAFDEC, FAO
Species Identification	Provide capacity building on species identification of small size (juvenile) and larval fishes	D1	Fisheries Agencies, Research Institutions, SEAFDEC
Status and Trends	Investigate the trend of short mackerel catch at national, sub-regional levels	D1	Fisheries Agencies, Research Institutions, SEAFDEC

Population dynamics (Growth parameters, mortalities etc.	Conduct survey on fisheries biology	D1	Fisheries Agencies, Research Institutions
Impact of fishing effort on stock structure (Multi- fishing gears to harvest)	Conduct study on impact of fishing effort on stock structure (Multi-fishing gears to harvest) to improve the fishery management	D1	Fisheries Agencies, Research Institutions, SEAFDEC
	Enhance Fishing gear technology for eco- friendly (Reduce bycatch, cost and expenditures)	D2	Fisheries Agencies, Research Institutions, SEAFDEC
Stock assessment and distributions for transboundary species	Enhance the cooperation for information sharing among the bordering countries	D1	Fisheries Agencies, SEAFDEC
Capacity building and experts exchange	Training, workshop, conference and experts exchange	D1,2	Fisheries Agencies, Research Institutions, SEAFDEC, FAO, UNEP-GEF

E) CLIMATE CHANGE DIMENSION

Overall Objective: Adaptive management based on understanding the impact of climate change and disaster

Specific Objectives:

E1. adaptive management measures **in place** in response to the impact of climate change and disaster to short mackerel fisheries and habitats

E2. mitigation and precautionary measures **adopted** to compensate the effects of climate change

Knowledge Gaps/Issues	Actions	Ref.	Responsibility
Impact of climate change to fish migration route	Assess the impact of climate change/disaster/anthropogenic activities to fish migration route, habitat and behavior	E1	Fisheries and Environmental Agencies, Research Institutions, SEAFDEC, UNEP-GEF, UNDP, FAO
	Study effect of environmental changes on the migratory pattern and spawning patterns based on climate change	E1	Fisheries and Environmental Agencies, Research Institutions, SEAFDEC, UNEP-GEF, UNDP, FAO
	Share information from the findings of scientific research to both fisheries managers and fishers	E2	Fisheries and Environmental Agencies, Research Institutions, SEAFDEC, UNEP-GEF, UNDP, FAO
Sensitivity of species on critical habitats and environment impact to ecosystem (pollution, climate change, etc)	Conduct study on sensitivity of species on environment change (pollution, climate change, etc) to support the management response	E1	Fisheries and Environmental Agencies, Research Institutions, SEAFDEC, UNEP-GEF, UNDP, FAO
	Study on the critical habitats (spawning and grounds)	E1	Fisheries and Environmental Agencies,

			Research Institutions, SEAFDEC, UNEP-GEF, UNDP, FAO
	Study effect of environmental changes on the migratory pattern and spawning patterns	E1	Fisheries and Environmental Agencies, Research Institutions, SEAFDEC, UNEP-GEF, UNDP, FAO
	Data sharing (assign focal person to share information)	E1	Fisheries and Environmental Agencies, Research Institutions, SEAFDEC, UNEP-GEF, UNDP, FAO
Capacity building and experts exchange	Training, workshop, conference and experts exchange on CC impacts	E1 E2	Fisheries and Environmental Agencies, Research Institutions, SEAFDEC, UNEP-GEF, UNDP, FAO

ANNEX 9: OCEAN MODELLING SYSTEM²

I. INTRODUCTION

Taking into consideration during the past decades (2006-2008), Collaborative research activities of the SCS Project and SEAFDEC have resulted in a preliminary information base on key spawning (sources) and nursery areas (sinks) of economically important species in the South China Sea. These research activities involved analysis of information collected during cruises of the SEAFDEC Research Vessel M.V. SEAFDEC in the following areas: the Gulf of Thailand and the East Coast of Peninsular Malaysia; the West Coast of Sabah, Sarawak, and Brunei Darussalam; the West Coast of Luzon, Philippines; and in Vietnamese Waters. Drawing on these data, the distribution and abundance of the larvae of important demersal and pelagic fish species in the South China Sea was mapped. To improve regional understanding of fish early life history and links to critical habitats, the component 2 of this project aims to build on this foundational work on data mapping via the development of a modelling system, linking known sources and sinks of fish larvae to ocean circulation patterns and nutrient/chlorophyll concentrations in the South China Sea and the Gulf of Thailand.

II. ISSUES AND CHALLENGES ON DEVELOPMENT OF OCEAN MODELLING

Over the past 40 years, numerical modelling has developed rapidly in scope (from hydrodynamics to ecology) and resolution (from one-dimensional, 10^2 elements to 3-D, 10^8 elements) exploiting the contemporaneous development of computing power. Associated challenges and future options to sustain the science and technology to meet the requirements of the end-user are identified. In reviewing future strategies for the development of modelling, subsequent sections examine sub-components of this system, namely: the requirements of the end-user; scope and development of modelling; operation of models; data requirements from observations and coupled models (see Figure 1).

In addition, an effective operation of both ocean and coupled shelf-sea models requires access to supercomputers and continuous maintenance of software. Major infrastructural investment is needed and high cost for long term maintenance.

III. EXISTING OCEAN MODELLING

During the project development in 2007-2008, Ocean modelling system in the Southeast Asia was quite new and very interesting subject that help scientist to understanding ocean circulation and other parameters which could be applied for management of fisheries. Ocean Forecasting Demonstration System (OFDS) was officially launched for the first time

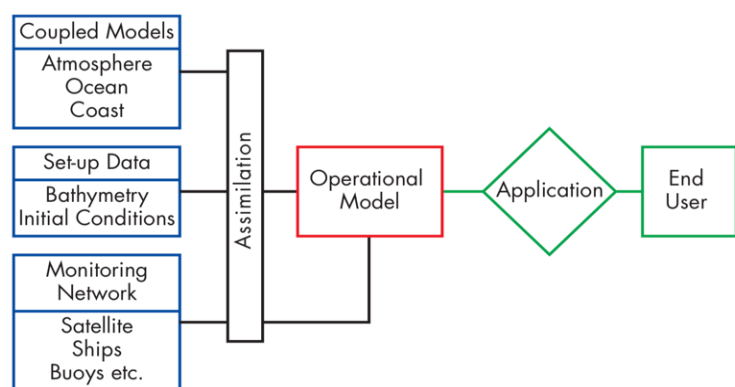


Figure 1: Components of a modelling simulation system

² SEAFDEC, 2019: PROGRESS IN OCEAN FORECASTING SYSTEM IN THAILAND, Thailand-China Joint Laboratory for Climate and Marine Ecosystem in the 2nd Meeting of the Regional Scientific and Technical Committee Meeting held on 21-23 May 2019 in Kampot, Cambodia.

during the 8th IOC-WESTPAC Meeting in Bali, Indonesia in May 2010. The system was developed by the First Institute of Oceanography (FIO) based on wave-tide-circulation model. In Phase I of the project in 2010-2012, the first version of OFS covers only the southern South China Sea and was operated by Dr. Wendy Watson-Wright, Executive Secretary of IOC, Assistant Director General of UNESCO. The Phase II in 2013-2015, the domain was extended to cover entire Southeast Asian area including northwest Pacific, South China Sea, and the north-eastern Indian Ocean. The breakthrough of the OFS happened on 9 October 2013 when Chinese Premier Keqiang Li proposed to initiate the China-ASEAN Cooperation Fund and announced to subsidize the first 17 projects which included the OFS in the 16th China-ASEAN Summit.

At present, the Ocean Forecasting System Framework (OFS) is based on wave-circulation coupled model, MASNUM: Laboratory of MARine Sciences and NUmerical Modeling, State Oceanic Administration, China. The circulation part is based on POM (Princeton Ocean Model) and the wave component is based on MASNUM-WAM model. The model is forced by forcing obtained from NCEP products. An advancement of this model is a way to couple wave and circulation model through the so-called wave-induced viscosity B_v by introducing it into the Mellor-Yamada scheme (Mellor and Yamada, 1982) in POM. A nested scheme from the quasi-global to Southeast Asian area is used to obtain the open boundary conditions (figure 2).

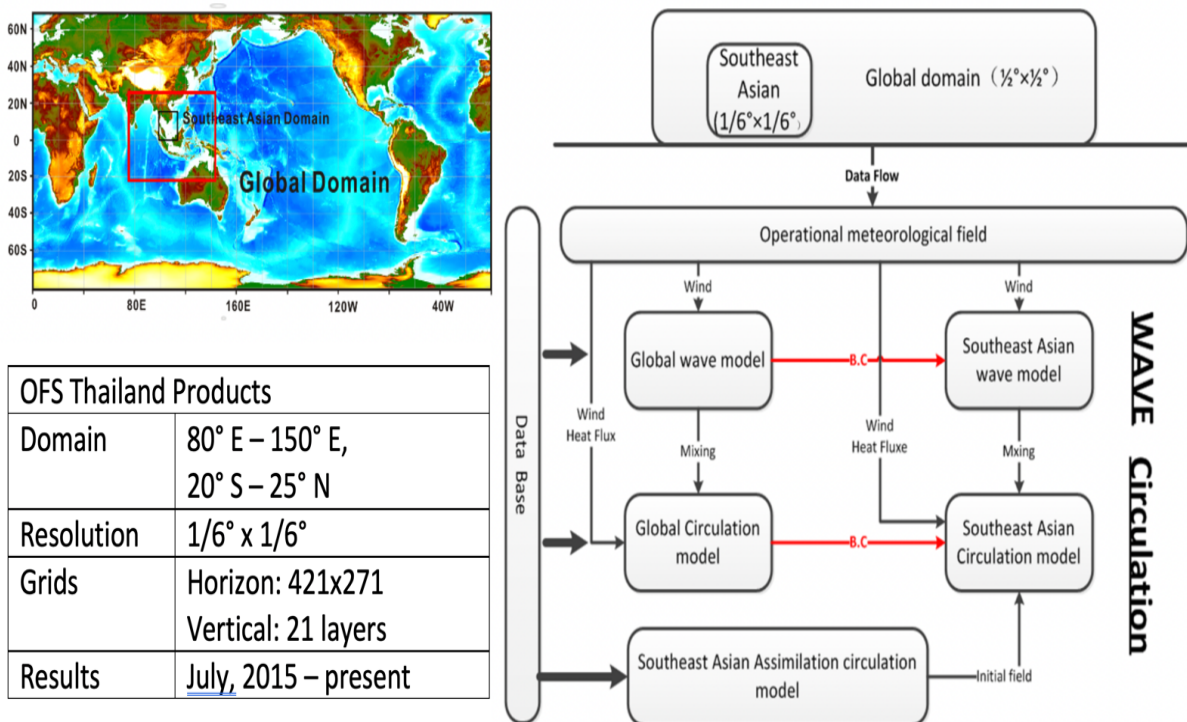


Figure 2: OFS simulation domain (Left) and framework (right)

In 2014, the Department of Marine and Coastal Resources (DMCR) of Thailand has got the budget for in setting up the OFS system in Thailand. And one year later, the DMCR in collaboration with the FIO installed the OFS system at Phuket Marine Biological Center (PMBC), Phuket, Thailand and also organize workshops instructing the DMCR to operate the system routinely. OFS Thailand has run since July 2015 providing output in five parameters; i.e., wind, wave height, sea level, current and temperature, the last two of which are in 21 layers. The forecast results can be shown the vertical profiling which are

beneficial for capturing the mixed-layer depth. The data archives are available for downloading at <http://ofs.dmcr.go.th/thailand/archives.jsp> (details in figure 3).

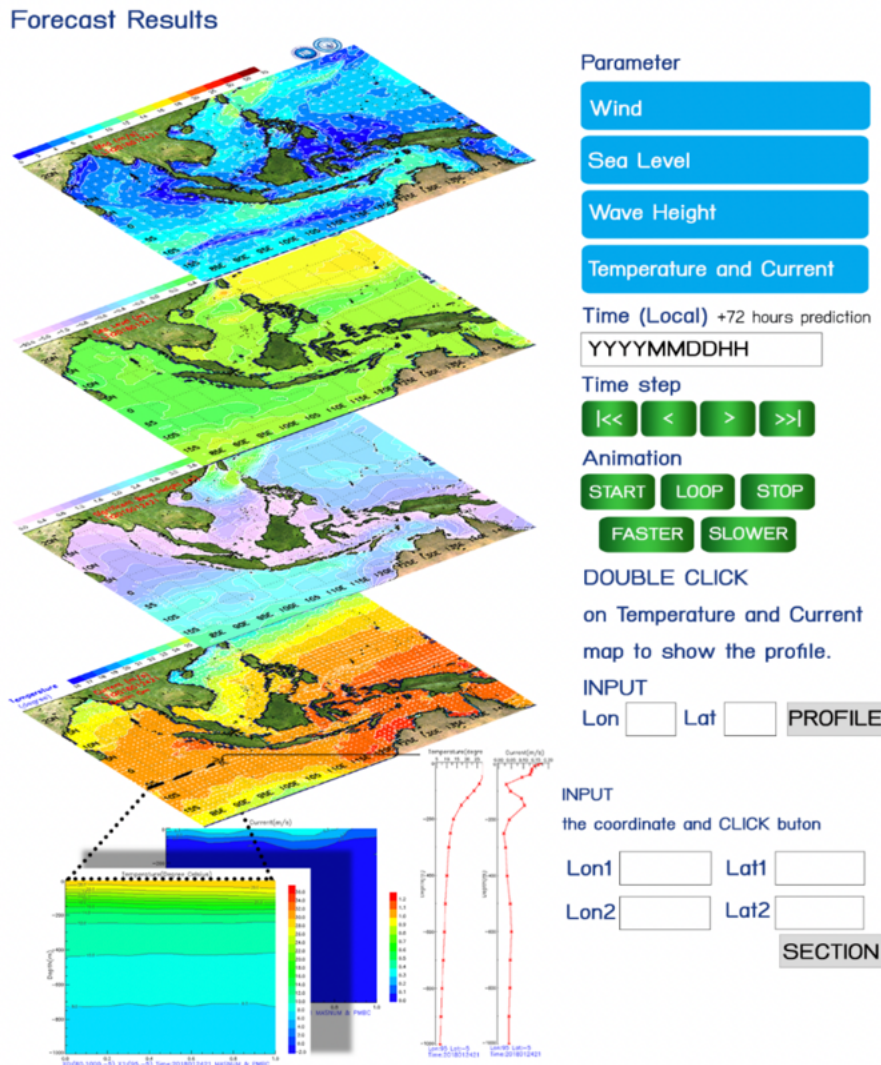


Figure 3: OFS visualization and tools for extracting specific results

IV. PROJECT DECISION ON USING OF OCEAN MODELLING

This issue was addressed at the 2nd Meeting of the Regional Scientific and Technical Committee Meeting in May 2019 in Kampot, Cambodia. The expert from the Phuket Marine Biological Center of the DMCR, was invited to introduce OFS visualization and tools including the URL on the ocean circulation and future improvement of the system for higher resolution in the specific region including the Southeast Asia.

With OFS breakthroughs during the 2nd phase, the first surface wave-tide-circulation coupled model of FIO-COM was established in 2013, and then adopted as the core to produce reanalysis dataset for the period Jan., 2014 to April, 2016. It became in the operational OFS since May, 2016. Highly efficient parallel scheme is designed to use full-scale of Taihu-Light with 10,649,600 CPU cores (Qiao et al., 2016), which was on the finalist of the international ACM Gordon Bell Prize. The forecasting products can be easily accessed both

through website <http://221.215.61.118:2018/#> and cell phone APP of “Global Ocean on Desk” (GOOD). To cite this dataset this dataset, please quote the version number and cite Qiao *et al*, (2019) (figure 4)

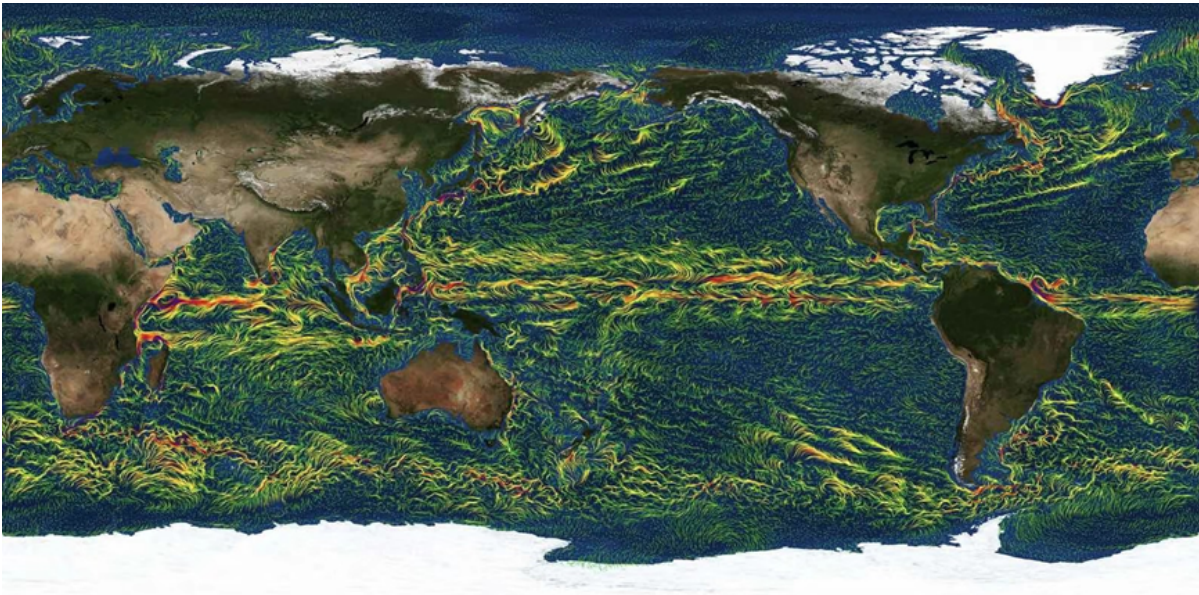


Figure 4 The snapshot of the OFS for 21st Century Maritime Silk Road published on 10 December 2018 through <http://221.215.61.118:2018/#>

V. CONSIDERATION AND DECISION BY THE COMMITTEE

- The Committee is requested to take note on the existing Ocean Forecasting System that includes many parameters such as wind, current, temperature, sea level, high wave, etc. which are very useful for integration with the fisheries parameters to support the management of fisheries and establishment of fisheries refugia.
- Refers to the project budget which planned for hiring consultant(s) for developing the system is therefore not necessary, taking into account the over efforts, and costly for long term system management/maintenance. The PCU therefore, requests the committee for consideration and decision the proposed revision this budget for other purposes.
- The committee is welcomed to provide the advice and comments on this matter.

ANNEX 10: BEST PRACTICE FISHING GEARS AND METHODS AND WORKPLAN FOR DEMONSTRATION AND PROMOTION

PCU FOR FISHERIES REFUGIA

I. ISSUES AND THREATS FROM FISHERIES TO COASTAL RESOURCE AND HABITAT IN THE SOUTH CHINA SEA

The South China Sea is a global centre of shallow water marine biological diversity that supports significant fisheries that are important to the food security and export income of Southeast Asian countries. These fisheries are characterised by high levels of fishing effort from the small-scale sector. Accordingly, all inshore waters of the South China Sea basin are subject to intense fishing pressure. This situation of high small-scale fishing pressure and declining fisheries resources has contributed to the adoption of unsustainable fishing methods to maintain catch and increase incomes in the short-term. These include the use of destructive fishing gear and practices, such as the operation of demersal trawls and push nets in seagrass areas, and the detonation of explosives and release of fish poisons in coral reef areas. Small-scale inshore fishing pressure has therefore been identified as a significant cause of the degradation and loss of coastal habitats in the South China Sea. By these reasons, the rate of loss of coastal habitats has been implemented by countries bordering the South China Sea, the decadal rate of loss of such habitats remains high, e.g., seagrass beds (30%), mangroves (16 %), and coral reefs (16 %)(Vo et al, 2013). This continued decline in the total area of habitats critical to the life cycles of most aquatic species, combined with the high levels of coastal community dependence on fish, has raised serious concerns for the long-term sustainability of small-scale fisheries in the region. With fish production being intrinsically linked to the quality and area of habitats and the heightened dependence of coastal communities on fish, a need exists to improve the integration of fish habitat considerations and fisheries management in the region.

II. THE USE OF DESTRUCTIVE AND/OR UNSUSTAINABLE FISHING GEAR AND PRACTICES IN THE SOUTH CHINA SEA

This issue is prevalent across a range of fisheries and habitat types in the South China Sea. For example, destructive and/or unsustainable fishing gear and practices have been identified as key threats to fish stocks and their habitats in the mangrove areas at Trat in Thailand and at Batu Ampur in Indonesia, the extensive seagrass areas of Bolinao in the Philippines and Kampot in Cambodia, and at the regionally significant coral reef areas at Belitung in Indonesia, Masinloc in the Philippines and Phu Quoc in Vietnam. The destructive and/or unsustainable fishing gear and practices in the SEA was reported as follow:

Push netting and inshore trawl fishing causes habitat impacts and selectivity issues. Catches in these gear types from inshore waters are largely composed of juveniles, and at high fishing effort levels are thought to contribute to growth over-fishing in South China Sea basin. Such a situation hinders fisheries management efforts which largely focus on development of sustainable livelihoods and is a key threat in inshore where push nets are used extensively over seagrass beds to take juveniles of the economically important species.

Digging and gleaning of seagrass beds and mangrove forests is an area of concern at a majority of the priority refugia sites in the South China Sea. Growing demand for seafood in local markets has resulted

in a marked increase over recent years in the number of people digging for sipunculid worms, gastropods, and crustaceans in the seagrass beds, leading to damage of seagrass plants, destabilisation of sediments (and subsequent erosion), and the over-exploitation of benthic organisms. Intensive digging and grazing in some mangrove areas is considered to be contributing to the occurrence of dwarf, low-density mangrove stands at several sites due to disturbance of mangrove roots and seedlings.

Blast fishing, poisons, and unselective fishing gears/practices are well-known and documented threats to fisheries and habitats in nearly all areas of the South China Sea. These fishing practices often result in mortalities of a wide range of size-classes of target and non-target species, contributing to both growth and recruitment overfishing. The effects of blasting on the physical structure of coral communities is of particular concern, and the occurrence of blast fishing “craters” on heavily blasted reefs has a major impact on coral reef associated fish assemblages. Non-selective fishing gears, such as trammel nets, are utilised in most fished coral reef areas along the South China Sea coast. The use of unselective fishing gear and practice/method, such as luring light purse seine in Thailand and large-scale lift net with light in Indonesia, has been identified that those are an environmental-unfriendly fishing practice due to catching of immature stock, high rate of by-catch and discard. Those unselective fishing activities are causing problem of declining of fisheries resources. The growing need to minimise the impacts of such practices on critical habitats necessitates the development of best practices in the management of these problems.

III. FISHERIES COMPONENT OF STRATEGIC ACTION PROGRAMME FOR THE SOUTH CHINA SEA

Taking into accounts above concerns, this project entitled “Establishment and Operation of a Regional System of Fisheries Refugia in the South China Sea and Gulf of Thailand” has been developed to meet this need via implementation of the fisheries component of the Strategic Action Programme for the South China Sea. The project comprises of the following 4 components as;

- Component 1: Identification and management of fisheries and critical habitat linkages at priority fisheries refugia in the South China Sea and Gulf of Thailand;
- Component 2: Improving the management of critical habitats for fish stocks of transboundary significance via national and regional actions to strengthen the enabling environment and knowledge-based fisheries refugia management in the South China Sea and Gulf of Thailand;
- Component 3: Information Management and Dissemination in support of national and regional-level implementation of the fisheries refugia concept in the South China Sea and Gulf of Thailand;
- Component 4: National and regional cooperation and coordination for integrated fish stock and critical habitat management in the South China Sea and Gulf of Thailand.

Focusing to Component 2, the objective of this component is focused on strengthening the enabling environment for the formal designation and operational management of refugia. Additionally, the component will lead to considerable stress reduction. Specifically, the demonstrations of best practice fishing methods and practices aimed at addressing key threats to fish stock and critical habitat linkages, and the adoption of supporting laws, will result in a 20% increase in vessels applying improved gear/techniques to safeguard fish stock and critical habitat linkages at priority sites. This component has identified one important national level activities on Targeted demonstration activities which stated in the component 2.9. This Activities will support, guide and building up the National Lead Agencies in establishing coastal fisheries management systems in priority fisheries refugia including create a trial approaches to reducing the effects of trawl and push net fishing on seagrass habitat, as well as to test

the use of fishing gear and practices that reduce the capture of juveniles, pre-recruits and fish in spawning condition.

IV. THE RESULT MATRIX OF THE CAUSAL CHAIN ANALYSIS AND POSSIBLE MANAGEMENT ACTION

In year 2017-2018, The national lead agency of fisheries from 4 of 6 implementing countries have organized a series of multi-stakeholder consultation at the selected refugia sites including Kep province, Kampot province and Koh Kong province in Cambodia, Trat province and Surat Thani in Thailand, Bolinao, Mazinloc and Coron in Philippine, Kuala Baram and Tanjung Leman in Malaysia. The multi-stakeholder consultation at the local site was aimed to compiling the information, suggestion and issue on the coastal habitat from all local resource users. One objective of the consultations was focused on the threat to fish life cycle from fisheries base on the experiences from all stakeholders through casual chain analysis methodology. The result matrix of the causal chain analysis and possible management action solution is concluded as shown in **APPENDIX 1**.

V. POSSIBLE SOLUTIONS ON THE BEST PRACTICES ON FISHING GEARS AND METHODS

To support the achievements of the component 2 on Improving the management of critical habitats for fish stocks of transboundary significance via national and regional actions to strengthen the enabling environment and knowledge-based fisheries refugia management in the South China Sea and Gulf of Thailand, the SEAFDEC/PCU reviewed possible solutions of the best practices on fishing gears and methods for example the FAO technical guidelines for responsible fisheries No. 4 Suppl. 2: the Ecosystem Approach to Fisheries (FAO, 2003), where the matrix of the options to manage fishing was summarized as shown in the **APPENDIX 2**.

Additionally, the Southeast Asian Fisheries Development Center (SEAFDEC) have long experienced through implementing various activities on the innovation on improvement of fishing gear and practice for sustainable management of fisheries in Southeast Asia. The possible solutions on the best practices on fishing gears and methods developed by SEAFDEC are concluded as shown in **APPENDIX 3**.

VI. PROMOTION AND DEMONSTRATIONS ON THE BEST PRACTICING GEAR/METHODS

Reference to the proposed regional activities to support and promote the best practices on fishing gear and methods focusing not only in the refugia sites but vicinity nearby the site which aims to reduce the impact from fishing gears to fisheries resources and refugia site. The PCU in collaboration with the SEAFDEC/Training Department proposes to work closely with country on fishing gear modification and fishing practice improvement to support an Establishment of fisheries refugia at country levels. The objectives on these regional activities are: 1) to demonstrate the best practice fishing method such as JTEDs for demersal and small pelagic fishes, modification of Crab-trap, elongated collapsible trap for demersal fishes, and others requested by country; 2) to identify the trial approaches to reducing the effects of destructive fishing at priority refugia site especially on seagrass habitat, as well as to test the use of fishing gear and practices that reduce the capture of juveniles, pre-recruits and fish in spawning condition; and 3) to address key threats to fish stock and critical habitat linkages and provide capacity to the site-based management board and local fisher.

This matter has been addressed at the RSTC2 on the requested from country for promotion and demonstrations of best fishing practices based on the appendix 1, 2 and 3. The PCU is planning to conduct the survey and demonstration and provide the awareness capacity for improving of fishing gears and methods. The PCU will select another refugia sites to work with country on promotion of the best fishing practices in the participating countries. The activities

The tentative workplan for surveys and demonstration of best practices gear/methods is as follows:

Activity	Workplan by Country (from Q4/2019-Q3/2020)					
	CAM	ID	MY	PH	TH	VN
1. Workshop on demonstration of best Practice fishing gear and methods	Q4/19	TBC	TBC	TBC	TBC	TBC
2. Specific Research: Impacts of Elongated Collapsible Trap fishery in Kep Cambodia	Q1/20	TBC	TBC	TBC	TBC	TBC
3. Specific Research: Best practices for Blue swimming crab fisheries	TBC	TBC	TBC	TBC	Q4/19	TBC
4. Others (will be updated)						

Remarks: TBC : To be confirmed

Please be noted that the results of the specific research in requested country can be lesson learned for other country in near future. The Demonstration and promotion of best fishing gears and method including the promotion of the specific research program are depended upon the availability of regional budget for this program.

VII. CONSIDERATION AND ADVISE FROM PSC

- The Committee is requested to take notes and apply the results mentioned in the **Appendix 3, 4 and 5** for improving the existing fishing gears and methods that impact to environment and fisheries refugia site;
- The Committee is welcomed to provide the comments, suggestions, advise to the PCU on their required specific research to improve the specific fishing gear and methods to ensure that there is no irresponsible fishing gears in the sites;
- The committee is requested to endorse the revised tentative workplan by countries (if any amendment and/or proposed proposal by Country).

APPENDIX 3:

The Result Matrix of the Causal Chain Analysis and Possible Management Action

Country	Site Name	Target Species	Stage of life-cycle	Threat	Immediate Cause	Root Cause	Management Action
Cambodia	Kep	Blue swimming crab	Juvenile	<ul style="list-style-type: none"> Loss of habitat (i.e. sea grass) Illegal fishing Habitat destruction Over fishing 	<ul style="list-style-type: none"> Use of unsustainable fishing gear/practice (i.e. Small Mesh elongated collapsible trap) Destructive fishing gear Purse seine net trawlers 	<ul style="list-style-type: none"> High market demand High price Unsustainable fishing gear using Destructive fishing gear 	<ul style="list-style-type: none"> Strengthening fisheries law enforcement Fisheries law extension Establishment of conservation area Creating crab bank Alternative livelihood provision
		Blue swimming crab	Spawning (Dec. to Jan.)	<ul style="list-style-type: none"> Destruction of spawning habitat Loss of seagrass Over fishing 	<ul style="list-style-type: none"> Illegal fishing Trawlers with small mesh size net Use of inappropriate fishing gear Small Mesh elongated collapsible trap Purse seine trawlers Unsustainable fishing gears 	<ul style="list-style-type: none"> Effort fishing to catch more fish High price High market demand 	<ul style="list-style-type: none"> Conservation area development Strengthening law enforcement Fisheries law extension Creation of conservation area Strengthening patrolling and monitoring
	Kampot	Grouper (<i>Epinephelus spp.</i>)	Adult	<ul style="list-style-type: none"> Declining fish Habitat destruction 	<ul style="list-style-type: none"> Mouse tailed trap Trawler with ball light 	<ul style="list-style-type: none"> High demand High price in market 	<ul style="list-style-type: none"> Strengthening law enforcement Strengthening patrolling group Strengthening cooperation with relevant stakeholders Establishing fisheries refugia
		Grouper (<i>Epinephelus spp.</i>)	Fingerlings (October to December)	<ul style="list-style-type: none"> Declining of fingerlings Habitat destruction such as sea grass, coral reef, and mangrove forest 	<ul style="list-style-type: none"> Mosquito (Small) net fishing gear Push net fishing with electric Mouse tailed trap Trawler with ball light Hand Push net 	<ul style="list-style-type: none"> High Demand from cage culture High price in market 	<ul style="list-style-type: none"> Strengthening law enforcement Strengthening patrolling group Strengthening cooperation with relevant stakeholders Establishing fisheries refugia Strengthening the extension to fish seed traders

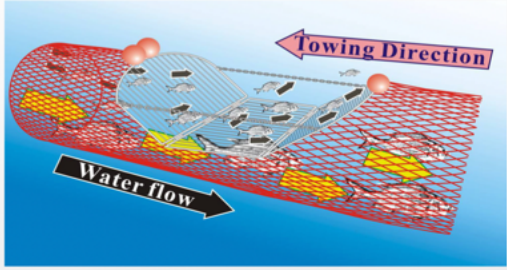



							<ul style="list-style-type: none"> • Replanting flooded forest (Wetland)
	Koh Kong	Mackerel	Spawning (November to January at Koh Kapi, Prek 3& 2, Boeung Kachang, Koh Yor, and Koh Nou)	<ul style="list-style-type: none"> • Habitat loss • Over fishing 	<ul style="list-style-type: none"> • Illegal fishing • Mackerel gill net with small mesh size • Light Luring fishing • Purse seine net and trawlers from neighboring country • Trawlers with small mesh size net from 2.5 to 3cm 	<ul style="list-style-type: none"> • High market demand in neighboring country • Destructive fishing gears • Illegal fishing from outside area 	<ul style="list-style-type: none"> • Establishment of fisheries refugia • Strengthening patrolling group to make MCS • Strengthening law enforcement • Extending fisheries law • Making co-operation with relevant stakeholders • Strengthening transboundary-bilateral operation
Thailand	Trat	Indo-Pacific mackerel	Whole life cycle	<ul style="list-style-type: none"> • Overfishing • Destructive fishing gears (e.g. giant trawls) 	<ul style="list-style-type: none"> • Illegal fishing • Invasion of foreign fishing • Fishing by foreigner workers • High market demand • Needs of small size for processing 	<ul style="list-style-type: none"> • Increasing number of small-scale fishing boats altered from the commercial ones • Non-cooperation of some fishing group • Lacking in fisheries conservation awareness • Insufficiency of public authority • Overlapped functions of relevant public authorities 	<ul style="list-style-type: none"> • Strengthening fisheries law enforcement • Creating conservation areas (restricted fishing gear) • Increasing awareness • Promoting participatory approach fisheries management • Empowering the communities on community base fisheries management • Promoting community regulations for fisheries management • Promoting fishing eco-tourism • Establishing aquatic animal banks • Rehabilitating and establishing fisheries habitat • Promoting mesh size restriction

	Surat Thani	Blue swimming crab	Whole life cycle	<ul style="list-style-type: none"> • Use of Unsustainable fishing gears • Overfishing 	<ul style="list-style-type: none"> • Illegal fishing • Fishing of small-size crabs in seagrass bed • Small mesh-size nets 	<ul style="list-style-type: none"> • Illegal fishing • High market demand • Lacking in fisheries conservation awareness • Low water quality • Climate change 	<ul style="list-style-type: none"> • Strengthening fisheries law enforcement • Establishing crab bank • Creating conservation areas • Creating awareness
Philippine	Bolinao	Rabbit fish (<i>Siganus spp.</i>)	juveniles	<ul style="list-style-type: none"> • Over harvesting of juveniles 	<ul style="list-style-type: none"> • high demand of fish paste 	<ul style="list-style-type: none"> • Easy source of income for marginal fisherman 	<ul style="list-style-type: none"> • Size regulation on the harvesting of Rabbit fish & provision of supplemental livelihood
	Mazinloc	Frigate tuna (<i>Auxis spp.</i>)	Pre-recruits / Juvenile	<ul style="list-style-type: none"> • Overfishing, use of fine mesh nets 	<ul style="list-style-type: none"> • FADs fishing 	<ul style="list-style-type: none"> • Due to high demand 	<ul style="list-style-type: none"> • FAD Management plan, Mesh size regulation
	Colon	Fusilier fish		<ul style="list-style-type: none"> • Decreasing of fish • Loss of coral habitat 	<ul style="list-style-type: none"> • Unsustainable fishing practice: • Use of cyanide in the live reef fish industry • Blast fishing • Non-selective fishing gear and practices • Collection of corals as sinker • Solid waste pollution 		
Malaysia	Kuala Baram, Sarawak	Tiger Prawn (<i>P. monodon</i>)	Juvenile	<ul style="list-style-type: none"> • deforestation 			
			Pre-recruit	<ul style="list-style-type: none"> • Shrimp push net & bag net 			
			Adult	<ul style="list-style-type: none"> • Trawl net 			
			Spawning	<ul style="list-style-type: none"> • Trawl net 			
	Tanjung Leman, Johor	Lobster (<i>Panulirus spp.</i>)					

APPENDIX 4: The matrix of the options to manage the fishing that summarized from the FAO technical guidelines for responsible fisheries volume 4 Suppl. 2: The Ecosystem Approach to Fisheries (FAO, 2003)

1. Technical measures	Gear modifications that improve selectivity	<ul style="list-style-type: none"> • Gear restriction • Mesh size restrictions • Fishing method control • Non-target species selectivity (TEDs, JTEDs, C-hook, etc.)
	Other gear issues	<ul style="list-style-type: none"> • Environmental conditions (light level, temperature, current speed, etc.). • Ghost fishing control
	Spatial and temporal controls on fishing	<ul style="list-style-type: none"> • Seasonal closure • Fisheries <i>Refugia</i> • MPA
	Control of the impact from fishing gear on habitats	<ul style="list-style-type: none"> • Prohibition of certain gear in some habitats (trawling in coral reef and seagrass areas) • Replace a high-impact fishing method with one with less impact on the bottom, e.g. trapping, longlining or gillnetting.
	Energy efficiency and pollution	<ul style="list-style-type: none"> • Reduce of CO2 emissions. • Energy optimization
2. Input (effort) and output (catch) control	Controlling overall fishing mortality	<ul style="list-style-type: none"> • Capacity limitation spatial/temporal • Access limitations • Effort limitation
	Catch controls	<ul style="list-style-type: none"> • By-catch controls (such as quotas)
3. Ecosystem manipulation	Habitat modifications	<ul style="list-style-type: none"> • Preventing habitat degradation • Prohibition of destructive fishing methods in ecologically sensitive habitats (such as seagrass beds); • Prohibition of intentional cleaning of the seafloor to facilitate fishing; and • Reduction of the intensity of fishing in some fishing grounds to ensure that non-target • Providing additional habitat
	Population manipulation	<ul style="list-style-type: none"> • Restocking and stock enhancement
4. Rights-based management approaches		<ul style="list-style-type: none"> • User rights • Effort rights • Catch rights • Effort management

APPENDIX 5: Possible solution for best practices on fishing gear and methods promoted by SEAFDEC

<p>Juvenile and Trash Excluder Devices</p> <ul style="list-style-type: none"> • Fishing Gear: Bottom Trawls • Methods: Filtering and releasing fish • Target: juvenile or small fishes 	 
<p>Turtle Excluder Devices:</p> <ul style="list-style-type: none"> • Fishing Gear: Bottom Trawls • Methods: Filtering and releasing <p>Target: marine turtle</p>	 

ANNEX 11: KNOWLEDGE ATTITUDE AND PRACTICES

I. INTRODUCTION

The Project Coordinating Unit includes this issue for applying of “**KNOWLEDGE ATTITUDE AND PRACTICES**” into the project implementation by expressing the results in form of audio-visual presentation/ film to give audience easily understanding on the impacts of this project particular to ecosystem, and social aspects.

II. WHAT IS KNOWLEDGE ATTITUDE AND PRACTICE?

KAP Study tells us what people know about certain things, how they feel and also how they behave. The three topics that a KAP study measures are Knowledge, Attitude and Practice. The Knowledge possessed by a community refers to their understanding of any given topic.

A KAP survey is a quantitative method (predefined questions formatted in standardized questionnaires) that provides access to quantitative and qualitative information. KAP surveys reveal misconceptions or misunderstandings that may represent obstacles to the activities that we would like to implement and potential barriers to behavior change. Note that a KAP survey essentially records an “opinion” and is based on the “declarative” (i.e., statements). In other words, the KAP survey reveals what was said, but there may be considerable gaps between what is said and what is done.

III. HOW DO WE APPLY FOR THE PROJECT IMPLEMENTATION?

In general, when starting the project implementation, KAP survey has been conducted in form of baseline surveys to understand the situations of what we need to achieve. In this connection, it would be interesting, if the project could consider developing an audio-visual presentation/ film / infographic presentation, etc. to inform the public on change or impacts from the project activity.

IV. CONSIDERATION AND ACTION BY THE PSC

- The Committee is requested to take note and consider applying the KAP survey to show the results/achievement in a form of presentation/ film.
- The Committee is invited to share their lesson learned on this topic.

ANNEX 12: EXPENDITURE REPORT AS OF 30 SEPTEMBER 2019

Annex 13 - QUARTERLY EXPENDITURE STATEMENT and UNLIQUIDATED OBLIGATIONS REPORT (US\$)*											
Project title:		Establishment and Operation of a Regional System of Fisheries Refugia in the South China Sea and Gulf of Thailand									
Project number:											
Project implementing agency/organization:		Southeast Asian Fisheries Development Centre (SEAFDEC)									
Project implementation period:		From: Jan. 2017				To: Dec. 2020					
Reporting period:		From: 01-Jul-19				To: 30-Sep-19					
UNEP Budget Line		UNEP approved budget		Actual expenditures incurred**							Cumulative unspent balance to-date
		Total project budget	Current YEAR budget	Cumulative expenditures for current YEAR	Disbursements for current QUARTER	Unliquidated obligations for current QUARTER	Total expenditures for current QUARTER	Total expenditures for current YEAR	Cumulative expenditures for previous YEARS	Total cumulative expenditures to date	
		A	B	C	D	E	F=D+E	G=C+F	H	I=G+H	
1100	Project personnel	247,400	40,100	24,287.78	9,980.40	-	9,980.40	34,268.18	33,752.16	68,020.34	179,380
1200	Consultants	811,500	218,500	77,954.60	39,610.03	778	40,388.03	118,342.63	392,733.93	511,076.56	300,423
1300	Administrative support	-	-	-	0	-	-	-	-	-	-
1600	Travel on official business	196,000	44,100	45,927.82	25,847.21	67	25,914.21	71,842.03	100,396.47	172,238.50	23,762
2100	Sub-contracts (UN entities)	-	-	-	-	-	-	-	-	-	-
2200	Sub-contracts (supporting organizations)	712,000	280,500	6,746.13	2,466.69	54	2,520.69	9,266.82	9,818.59	19,085.41	692,915
2300	Sub-contracts (for commercial purposes)	175,000	44,500	3,365.85	1,050.73	8,762	9,812.73	13,178.58	8,178.08	21,356.66	153,643
3200	Group training	205,800	35,000	11,294.05	18,292.34	2,040	20,332.34	31,626.39	41,144.68	72,771.07	133,029
3300	Meetings/Conferences	399,500	121,500	23,079.95	16,338.72	4,839	21,177.72	44,257.67	42,647.39	86,905.06	312,595
4100	Expendable equipment	3,000	-	1,466.52	45.00	-	45.00	1,511.52	643.35	2,154.87	845
4200	Non-expendable equipment	42,000	10,000	3,388.04	-	26	26.00	3,414.04	24,697.96	28,112.00	13,888
4300	Premises	42,000	-	5,974.00	-	-	-	5,974.00	5,376.00	11,350.00	30,650
5100	Operation and maintenance of equipment	500	-	59.00	60.60	-	60.60	119.60	-	119.60	380
5200	Reporting costs	62,500	21,000	325.00	-	-	-	325.00	860.09	1,185.09	61,315
5300	Sundry	2,800	-	1,066.88	1,408.53	3	1,411.53	2,478.41	767.10	3,245.51	(446)
5400	Hospitality and entertainment	-	-	-	-	-	-	-	-	-	-
5500	Evaluation	100,000	-	-	-	-	-	-	-	-	100,000
99	GRAND TOTAL	3,000,000	815,200	204,935.62	115,931.82	16,569.00	131,669.25	336,604.87	661,015.80	997,620.67	2,002,379

Remarks: 1) This expenditure report is excluded cash advance for Q4 in the country account.

2) The budget line is based on the 1st revision (ref. to wp.11)

FOR CONSIDERATION AND ACTION BY PSC

- The Committee is requested to take note on the expenditures as of 30 September 2019 and the overspent in budget line 5300,
- The Committee is welcomed to seek clarification if any, and endorse the total expenditure as of 30 September 2019.

ANNEX 13: CONSIDERATION OF THE CO-FINANCE AS OF 30 JUNE 2019

REPORT OF PLANNED AND ACTUAL CO-FINANCE BY BUDGET LINE									
Name:		I/A OWN FINANCE							
(Please prepare one worksheet per source of co-finance)									
Project title:		Establishment and Operation of A Regional System of Fisheries Refugia in the South China Sea and Gulf of Thailand							
Project number:									
Project executing partner:		SEAFDEC							
Project reporting period:		US\$	US\$	US\$	US\$	US\$	US\$	US\$	US\$
From:	1-Jan-19	Prior Year	Cash Cofinance		In-kind Cofinance		Total for year		Cummulative
To:	30-Jun-19	Actual Total	Planned	Actual	Planned	Actual	Planned	Actual	Actual Total
UNEP BUDGET LINE*		A	B	C	D	E	F = B+D	G = C+E	H = A+G
1100	Project personnel	288,640	8,784	-	43,919	57,728	52,703	57,728	346,368
1200	Consultants	-	-	-	-	-	-	-	-
1300	Administrative support	-	-	-	-	-	-	-	-
1600	Travel on official business (above staff)	-	6,476	-	32,379	-	38,855	-	-
2100	Sub-contracts (UN entities)	-	-	-	-	-	-	-	-
2200	Sub-contracts (supporting organizations)	-	-	-	-	-	-	-	-
2300	Sub-contracts (commercial purposes)	-	-	-	-	-	-	-	-
3200	Group training (study tours, field trips, workshops, seminars, etc.)	1,069,884	95,092	15,736	508,826	20,640	603,918	36,376	1,106,260
3300	Meetings/conferences	18,351	13,445	3,000	67,227	2,400	80,672	5,400	23,751
4100	Expendable equipment	-	-	-	-	-	-	-	-
4200	Non-expendable equipment	-	944	944	4,720	4,720	5,664	5,664	5,664
4300	Premises (office rent, maintenance of premises, etc.)	48,000	9,155	9,155	12,409	12,409	21,564	21,564	69,564
5100	Operation and maintenance of equipment	-	-	-	-	-	-	-	-
5200	Reporting costs (publications, maps, newsletters, printing, etc.)	-	-	-	-	-	-	-	-
5300	Sundry (communications, postage, freight, clearance charges, etc.)	-	-	-	-	-	-	-	-
5400	Hospitality and entertainment	-	-	-	-	-	-	-	-
5500	Evaluation (consultants fees/travel/DSA, admin support, etc.)	-	-	-	-	-	-	-	-
TOTAL COSTS		1,424,875	133,896	28,835	669,480	97,897	803,376	126,732	1,551,607
* The actual expenditures should be reported in accordance with the specific budget lines of the approved budget (Appendix 2) of the project document in Annex 1									
Name:		Title:		Name of Project Manager:		Mr. Somboon Siniiraksophon			
Duly authorized official of Executing Division						Signature:			
Signature:		Date:		Date:		13-Sep-19			

REPORT OF PLANNED AND ACTUAL CO-FINANCE BY BUDGET LINE										
Name:	GOVERNMENT									
(Please prepare one worksheet per source of co-finance)										
Project title:	Establishment and Operation of A Regional System of Fisheries Refugia in the South China Sea and Gulf of Thailand									
Project number:										
Project executing partner:	SEAFDEC									
Project reporting period:	US\$	US\$	US\$	US\$	US\$	US\$	US\$	US\$	US\$	
From :	1-Jan-19	Prior Year	Cash Cofinance		In-kind Cofinance		Total for year		Cummulative	
To :	30-Jun-19	Actual Total	Planned	Actual	Planned	Actual	Planned	Actual	Actual Total	
UNEP BUDGET LINE*	A	B	C	D	E	F = B+D	G = C+E	H = A+G		
1100	Project personnel	941,396	8,372	-	41,861	258,048	50,233	258,048	1,199,444	
1200	Consultants	-	-	-	-	-	-	-	-	
1300	Administrative support	7,284	-	1,600	-	32,960	-	34,560	41,844	
1600	Travel on official business (above staff)	120,104	6,172	10,000	30,861	-	37,034	10,000	130,104	
2100	Sub-contracts (UN entities)	-	-	-	-	-	-	-	-	
2200	Sub-contracts (supporting organizations)	-	-	-	-	-	-	-	-	
2300	Sub-contracts (commercial purposes)	-	-	-	-	-	-	-	-	
3200	Group training (study tours, field trips, workshops, seminars, etc.)	640,245	90,635	13,720	484,975	113,600	575,610	127,320	767,565	
3300	Meetings/conferences	65,425	12,815	-	64,075	3,520	76,890	3,520	68,945	
4100	Expendable equipment	-	-	-	-	-	-	-	-	
4200	Non-expendable equipment	-	900	-	4,499	4,499	5,398	4,499	4,499	
4300	Premises (office rent, maintenance of premises, etc.)	-	8,726	-	11,827	11,827	20,553	11,827	11,827	
5100	Operation and maintenance of equipment	-	-	-	-	-	-	-	-	
5200	Reporting costs (publications, maps, newsletters, printing, etc.)	-	-	-	-	-	-	-	-	
5300	Sundry (communications, postage, freight, clearance charges, etc.)	-	-	-	-	-	-	-	-	
5400	Hospitality and entertainment	-	-	-	-	-	-	-	-	
5500	Evaluation (consultants fees/travel/DSA, admin support, etc.)	-	-	-	-	-	-	-	-	
TOTAL COSTS		1,774,454	127,620	25,320	638,098	424,454	765,718	449,774	2,224,828	
* The actual expenditures should be reported in accordance with the specific budget lines of the approved budget (Appendix 2) of the project document in Annex 1										
Name:	Duly authorized official of Executing Division		Title:				Name of Project Manager:	Mr. Somboon Siriraksophon		
Signature:			Date:				Signature:			
							Date:	13-Sep-19		

FOR CONSIDERATION AND ACTION BY PSC

- The Committee is requested to take note on the CO-FINANCE Report as of 30 JUNE 2019 for SEAFDEC (1) and the countries:
- The Committee is welcomed to seek clarification if any, and endorse the total co-finance as of 30 June 2019.

ANNEX 14: COSTED IMPLEMENTATION PLAN FOR 2020

I. INTRODUCTION

This paper aims to compile the estimation of the costed implementation plan for 2020 for reference to the PCU for in advance calculation of a total budget requirement by each country. In addition, this information is also useful for the PCU to monitor and pre-analysis the overall budget for each activity that has been spent to avoid the overspent in each budget activities.

II. ESTIMATION OF THE COSTED IMPLEMENTATION PLAN FOR 2020

The PCU sent the template as appeared in the list of working document Ref.04 to all participating countries, accordingly the PCU received the response from 4 country including the PCU. The estimation of the Costed Implementation Plan for 2020 is as Appendix 6.

III. CONSIDERATION AND ACTION BY PSC

- The Committee is requested to take note estimation of the Costed Implementation Plan for 2020;
- The committee will be informed that the estimated total expenditures by 2020 is about 55-60% of the total GEF Funded;
- The Committee is welcomed to seek clarification if any, and encouraged to endorse the estimation of Costed Implementation Plan for 2020 (before and after inclusion of the estimate cost for Indonesia and Viet Nam.

Appendix 6: Estimation of the Costed Implementation Plan for 2020.

COMPONENT/ACTIVITY	COST IMPLEMENTATION PLAN FOR 2020 (ESTIMATEION IN USD)				
	Q1	Q2	Q3	Q4	TOTAL
COMPONENT 1: Identification and management of fisheries and critical habitat linkages at priority fisheries refugia					
ACTIVITY 1.1	12,048.78				12,048.78
ACTIVITY 1.2	15,757.83				15,757.83
ACTIVITY 1.3	6,000.00				6,000.00
ACTIVITY 1.4	5,000.00				5,000.00
ACTIVITY 1.5	-				-
COMPONENT 2: Improving the management of critical habitats for fish stocks of transboundary significance via national and regional actions to strengthen the enabling environment and knowledge-based for fisheries refugia management					
ACTIVITY 2.1	3,000.00	3,000.00	-	8,348.05	14,348.05
ACTIVITY 2.2	3,000.00	3,000.00	2,000.00	5,962.89	13,962.89
ACTIVITY 2.3	5,000.00	6,000.00	5,000.00	9,540.62	25,540.62
ACTIVITY 2.4	-	-	5,000.00	18,540.62	23,540.62
ACTIVITY 2.5	11,171.89	-	5,000.00	5,000.00	21,171.89
ACTIVITY 2.6	5,700.00	10,781.26	-	5,000.00	21,481.26
ACTIVITY 2.7	-	-	5,000.00	5,000.00	10,000.00
ACTIVITY 2.8	-	-	1,000.00	4,000.00	5,000.00
ACTIVITY 2.9 (Reg. Act.)	5,000.00	5,000.00			10,000.00
ACTIVITY 2.10 (Reg. Act.)	7,000.00	7,000.00	7,000.00	9,000.00	30,000.00
COMPONENT 3: Information Management and Dissemination in support of national and regional-level implementation of the fisheries refugia concept					
ACTIVITY 3.1	-	-	-	5,000.00	5,000.00
ACTIVITY 3.2	2,390.63	9,390.63	-	5,000.00	16,781.26
ACTIVITY 3.3	-	10,000.00	7,000.00	5,000.00	22,000.00
ACTIVITY 3.4 (Reg. Act.)	4,000.00	4,000.00	3,000.00	2,000.00	13,000.00
ACTIVITY 3.5 (Reg. Act.)	5,000.00	7,000.00	2,000.00	1,500.00	15,500.00
COMPONENT 4: National and regional cooperation and coordination for integrated fish stock and critical habitat management in the South China Sea					
ACTIVITY 4.1	2,779.69	150.00	2,779.69	150.00	5,859.38
ACTIVITY 4.2	500.00	8,171.89	500.00	8,171.89	17,343.78
ACTIVITY 4.3	9,629.69	8,129.69	11,629.69	7,479.69	36,868.76
ACTIVITY 4.4 (Reg. Act.)	18,000.00		18,000.00		36,000.00
ACTIVITY 4.5 (Reg. Act.)				20,000.00	20,000.00
ACTIVITY 4.6 (Reg. Act.)	47,500.00	37,500.00	37,500.00	37,500.00	160,000.00
TOTAL	168,478.51	119,123.47	112,409.38	162,193.76	562,205.12

Remarks: this estimation is not yet inclusion the CIP by ID and VN.

ANNEX 15: PROPOSED BUDGET REVISION

I. INTRODUCTION

Reference to the expenditure report as of 30 June 2019, some budget line indicated the overspent such as BL4300 (Premises), BL4100 (Expendable equipment), BL5300 (Sundry) and BL5100 (Operation and maintenance of equipment) as shown in Figure 1. Regarding this the large overspent was on BL4300 for Premises, in which there was no budget in the original workplan agreed by partner country and adopted by GEF. The Fund Manager from UNEP/HQ in Nairobi suggested the PCU to cover the overspent by revision of the project budget accordingly. In this connection, the PCU consulted with Lead agency, Malaysia particularly the BL4300 for premises in which country required for maintenance cost of the established Information Centres. Additionally, the overspent of others budget lines that used by partner countries and PCU are needed for revision.

<u>Annex 13 - QUARTERLY EXPENDITURE STATEMENT and UNLIQUIDATED OBLIGATIONS REPORT (US\$)*</u>											
Project title:		Establishment and Operation of a Regional System of Fisheries Refugia in the South China Sea and Gulf of Thailand									
Project number:											
Project implementing agency/organization:		Southeast Asian Fisheries Development Centre (SEAFDEC)									
Project implementation period:		From:	Jan. 2017			To:	Dec. 2020				
Reporting period:		From:	01-Apr-19			To:	30-Jun-19				
UNEP Budget Line		UNEP approved budget		Actual expenditures incurred**						Cumulative unspent balance to-date	
		Total project budget	Current YEAR budget	Cumulative expenditures for current YEAR	Disbursements for current QUARTER	Unliquidated obligations for current QUARTER	Total expenditures for current QUARTER	Total expenditures for current YEAR	Cumulative expenditures for previous YEARS		Total cumulative expenditures to date
		A	B	C	D	E	F=D+E	G=C+F	H		I=G+H
1100	Project personnel	247,400	40,100	-	12,338.14	-	12,338.14	12,338.14	45,701.80	58,039.94	189,360
1200	Consultants	811,500	218,500	-	38,153.97	-	38,153.97	38,153.97	432,534.56	470,688.53	340,811
1300	Administrative support	-	-	-	-	-	-	-	-	-	-
1600	Travel on official business	196,000	44,100	-	23,977.66	-	23,977.66	23,977.66	121,963.31	145,940.97	50,059
2100	Sub-contracts (UN entities)	-	-	-	-	-	-	-	-	-	-
2200	Sub-contracts (supporting organizations)	749,000	280,500	-	2,440.00	-	2,440.00	2,440.00	14,124.72	16,564.72	732,435
2300	Sub-contracts (for commercial purposes)	175,000	44,500	-	3,365.84	-	3,365.84	3,365.84	10,821.94	14,187.78	160,812
3200	Group training	205,800	35,000	-	5,502.90	-	5,502.90	5,502.90	46,936.06	52,438.96	153,361
3300	Meetings/Conferences	399,500	121,500	-	22,701.39	-	22,701.39	22,701.39	47,865.85	70,567.24	328,933
4100	Expendable equipment	1,000	-	-	1,416.52	-	1,416.52	1,416.52	623.35	2,039.87	(1,040)
4200	Non-expendable equipment	49,000	10,000	-	2,165.96	-	2,165.96	2,165.96	26,015.49	28,181.45	20,819
4300	Premises	-	-	-	-	-	-	-	11,350.00	11,350.00	(11,350)
5100	Operation and maintenance of equipment	-	-	-	59.00	-	59.00	59.00	-	59.00	(59)
5200	Reporting costs	65,000	21,000	-	-	-	-	-	1,185.09	1,185.09	63,815
5300	Sundry	800	-	-	622.30	-	622.30	622.30	1,270.22	1,892.52	(1,093)
5400	Hospitality and entertainment	-	-	-	-	-	-	-	-	-	-
5500	Evaluation	100,000	-	-	-	-	-	-	-	-	100,000
99	GRAND TOTAL	3,000,000	815,200	-	112,743.68	-	112,743.68	112,743.68	760,392.39	873,136.07	2,126,864

Figure 1

II. URGENT BUDGET REVISION SUGGESTED BY UNEP FUND MANAGER

In response to the UNEP/HQ, the PCU revised the project budget in parts of Malaysia and the PCU by reducing some budget line to add on the overspent budget lines. The revision of the project budget is shown in Figure 2.

UNEP PROJECT NO		829		
FINANCIAL YEAR		2019		
FUND		3,000,000		
ORG UNIT				
PROGRAMME				
PROJECT ID		5401		
PROJECT SYMBOL				
Code	Description	Project Budget	Proposed Revision	Adjustment
10	PROJECT PERSONNEL COMPONENT			
1100	Project Personnel w/m	247,400	247,400	-
1200	Consultants w/m	811,500	811,500	-
1600	Travel on official business (above staff)	196,000	196,000	-
1999	Component Total	1,254,900	1,254,900	-
20	SUB-CONTRACT COMPONENT			
2100	Sub-contracts (MoU's/LA's for UN cooperating agencies)	-	-	-
2200	Sub-contracts (MoU's/LA's for non-profit supporting organizations)	749,000	712,000	(37,000) (1)
2300	Sub-contracts (commercial purposes)	175,000	175,000	-
2999	Component Total	924,000	887,000	(37,000)
30	TRAINING COMPONENT			
3200	Group training (study tours, field trips, workshops, seminars, etc)	205,800	205,800	-
3300	Meetings/conferences (give title)	399,500	399,500	-
3999	Component Total	605,300	605,300	-
40	EQUIPMENT & PREMISES COMPONENT			
4100	Expendable equipment (items under \$1,500 each, for example)	1,000	3,000	2,000 (2)
4200	Non-expendable equipment (computers, office equip, etc)	49,000	42,000	(7,000) (3)
4300	Premises (office rent, maintenance of premises, etc)	-	42,000	42,000 (4)
4999	Component Total	50,000	87,000	37,000
50	MISCELLANEOUS COMPONENT			
5100	Operation and maintenance of equipment	-	500	500 (5)
5200	Reporting costs (publications, maps, newsletters, printing, etc)	65,000	62,500	(2,500) (6)
5300	Sundry (communications, postage, freight, clearance charges, etc)	800	2,800	2,000 (7)
5400	Hospitality and entertainment	-	-	-
5500	Evaluation (consultants fees ETC)	100,000	100,000	-
5999	Component Total	165,800	165,800	-
99	9999 GRAND TOTAL	3,000,000	3,000,000	-
	(1) Reduce to cover the overspent amount under BL 4300 plus anticipated additional expenses			
	(2) Increase to cover the overspent amount of USD 1,040 plus anticipated additional expenses			
	(3) Reduce to cover the overspent amount under BL 4100 and 4300 plus anticipated additional expenses			
	(4) Increase to cover the overspent amount of USD11,350 plus anticipated additional expenses			
	(5) Increase to cover the overspent amount of USD 59 plus anticipated additional expenses			
	(6) Reduce to cover the overspent amount under BL 5100 and 5300 plus anticipated additional expenses			
	(7) Increase to cover the overspent amount of USD 1,093 plus anticipated additional expenses			

Figure 2. 1st Revision of Project Budget

III. CONSIDERATION AND ACTION BY THE PSC

- The Committee is requested to take note and endorse the 1st Revision of the project budget in emergency case;
- The committee is also welcomed to advice the PCU on the revision of the project budget.

ANNEX 16: STATUS OF ANNUAL FINANCIAL AUDIT REPORTS FOR 2016-2018

In addition to the routine quarterly reports, UNEP requires an annual audit of the financial statements relating to the status of SEAFDEC/UNEP/GEF project funds as at 31 December each year, by a recognised firm of public accountants (for a government, by Government auditors), which shall be dispatched to SEAFDEC by 31 March and to UNEP before 30 June. Participating countries are required to submit annual audit reports of their financial statements while SEAFDEC is required to submit annual audit report of consolidated financial statements that combines all countries including the Project Coordinating Unit.

Table below indicates the submission of audit report of expenditures for the years 2016 to 2018. For the year 2016, only SEAFDEC is required to submit consolidated audit report which had been combined with the years 2017 and 2018, and received on 13 September 2019. Combined audit reports for the years 2017 and 2018 had been received from Cambodia, Philippines and Thailand. For the year 2018, Malaysia audit report had been received on 29 May 2019. Overall, the auditors had expressed their opinion that proper books of account and records have been maintained, all project expenditures are supported by vouchers and adequate documentation, and expenditures have been incurred in accordance with the objectives outlined in the National Project Document and Letter of Agreement.

There was no significant audit findings and observations in the submitted audited financial statements except for the Philippines where discrepancies were observed by the auditors. For the year 2017, the Statement of Net Assets summary and breakdown have different figures. For the year 2017 and 2018, the SNA and Project Expenditures Report have different figures. Some expenditures were not supported with proper and adequate documentation. Per audit report, there was no proper reconciliation made by the Project Management Office to correct the discrepancies. Reconciliation between the reported figures are ongoing to ensure proper reporting and to eliminate variance for 2019 transactions.

Status of financial audit reports submission as of 28 September 2019

	2016	2017	2018
Cambodia	Not required	1 April 2019 (Combined report)	
Indonesia	Not required	Not required	Not required
Malaysia	Not required	Not required	29 May 2019
Philippines	Not required	28 June 2019 (Combined report)	
Thailand	Not required	9 September 2019 (Combined report)	
Vietnam	Not required	Not required	Not required
SEAFDEC	13 September 2019 (Combined Report)		

DISCUSSION AND RECOMMENDATION

Except for the year 2016 where participating countries were not required to submit audit reports, most of the participating countries including SEAFDEC combined and submitted their audit reports beyond due date, i.e. by 31 March.

Participating countries are reminded that according to the UN Financial Rules and Procedures, no further cash advances will be made to any country through the PCU until the receipt of audited financial reports have been received.

Participating countries and SEAFDEC are reminded to take note of the audit report submission date as per Letter of Agreement, and advised to take the necessary action to avoid delays in the submission of financial audit reports in the future.

ANNEX 17: TEMPLATE OF FINANCIAL AUDIT FOR 2019

**SEAFDEC/UNEP/GEF PROJECT FOR (COUNTRY NAME)
STATEMENT OF NET ASSETS
AS AT**

	2019	
	xxxx Local Currency	US\$ (1US\$ =)
ACCUMULATED FUND		
As at		
REPRESENTAED BY		
Current assests		
* Cash and cash equivalents		
* Other receivables		
* Advances		
* Prepayment		
Total Assets		
Less: Liabilities		
* Accured payable		
Total Liabilities		
NET ASSETS		

Prepared by _____

 Assistant of Account

Certified by _____ Approved by _____

 Head of Account Head of National Institution

SEAFDEC/UNEP/GEF PROJECT FOR (COUNTRY NAME)
STATEMENT OF REVENUES AND EXPENDITURES
 FOR A PERIOD XXXX-XXXX

	2019	
	XXXX Local Currency	US\$ (1US\$ =)
REVENUES		
* Contribution from UNEP/GEF		
* Interest received		
* Exchange Gain (Loss)		
TOTAL REVENUES		
EXPENDITURES		
COM-I Identification and management of fisheries and critical habitat linkages at priority fisheries refugia		
COM-II Improving the management of critical habitats for fish stocks of transboundary significance via national and regional actions to strengthen the enabling environment and knowledge-base for fisheries refugia management		
COM-III Information Management and Dissemination in support of national and regional-level implementation of the fisheries refugia concept		
COM-IV National and regional cooperation and coordination for integrated fish stock and critical habitat management in the South China Sea		
TOTAL EXPENDITURES		
EXCESS (DEFICIENCY) OF REVENUES OVER EXPENDITURES		

SEAFDEC/UNEP/GEF PROJECT FOR (COUNTRY NAME)
SCHEDULES OF EXPENDITURES
FOR THE PERIOD: XXXX-XXXX

	2019	
	XXXX Local Currency	US\$ (1US\$ =)
COMPONENT I:		
Identification and management of fisheries refugia		
ACTIVITIES		
1.1	Developing fisheries and coastal habitat information and data collection programmes	
1.2	Facilitating agreement among stakeholders on the boundaries of fisheries refugia	
1.3	Developing Community-Based Management Plans	
1.4	Establishing operational management	
1.5	Strengthening civil society and community organization participation in the management of fisheries refugia sites	
TOTAL COMPONENT I		
<hr/> <hr/>		
COMPONENT II:		
Strengthening the enabling environment & knowledge base for management		
ACTIVITIES		
2.1	Enhancing policy guidance for improved management of the effects of fishing on critical habitats	
2.2	Defining the policy and legal basis for formal designation and establishment of fisheries refugia	
2.3	Development of national guidelines on the establishment and operation of fisheries refugia	
2.4	Reforming national policy, legal and planning frameworks for demarcating boundaries and managing refugia	
2.5	Enhancing access to information relating to status and trends in fish stocks and habitats	
2.6	Improving national-level management and sharing of information and data on fish early life history	
2.7	Enhancing access to information relating to the locations and status of coastal habitats and management areas	
2.8	Strengthening the information base for the planning, monitoring and evaluation of management at priority fisheries refugia sites	
2.9	Improved basin-wide understanding of linkages between ocean circulation patterns, nutrient/chlorophyll concentrations, and sources and sinks of fish larvae in the South China Sea	
2.10	Regionally and locally appropriate best practices generated to address the effects of trawl and push net fishing on seagrass habitat, and the capture of juveniles, pre-recruits and fish in spawning condition	
TOTAL COMPONENT II		
<hr/> <hr/>		

SEAFDEC/UNEP/GEF PROJECT FOR (COUNTRY NAME)
SCHEDULES OF EXPENDITURES
FOR THE PERIOD. XXXX-XXXX

	2019	
	XXXX Local Currency	US\$ (1US\$ =)
COMPONENT III:		
Information Management and Dissemination in support of national-level implementation of the fisheries refugia concept		
ACTIVITIES		
3.1 Enhancing national uptake of best practices in integrating fisheries management and biodiversity conservation	_____	_____
3.2 Improving community acceptance of area-based approaches to marine management	_____	_____
3.3 Knowledge generated & experiences from establishing and operating fisheries refugia captured & shared nationally, regionally, & globally	_____	_____
3.4 Information and Education Campaigns for small-scale fisherfolk on the links between fisheries, habitats and biodiversity	_____	_____
3.5 Standardised methods for collection and analysis of info and data on refugia effectiveness (including indicator system)	_____	_____
TOTAL COMPONENT III	=====	=====
COMPONENT IV:		
National coordination for integrated fish stock and critical habitat management		
ACTIVITIES		
4.1 Strengthened cross-sectoral coordination in the establishment and operation of fisheries refugia	_____	_____
4.2 Harnessing national scientific and technical expertise and knowledge to inform policy, legal and institutional reforms for fisheries refugia	_____	_____
4.3 Catalyzing local community action via establishment and operation of site-based management boards at priority refugia sites	_____	_____
4.4 Regional cooperation in the integration of scientific knowledge and research outputs with management	_____	_____
4.5 Regional cooperation in the establishment and operation of a regional system of fisheries refugia	_____	_____
4.6 Effective coordination of regional and national level activities and reporting	_____	_____
TOTAL COMPONENT IV	=====	=====

SEAFDEC/UNEP/GEF PROJECT FOR (CONTRY NAME)
DETAILS OF ACTIVITIES EXPENDITURES
 FOR A PERIOD. XXXX - XXXX

		2019	
		XXXX	US\$
		Local Currency	(1US\$ =)
Component I:			
Identification and management of fisheries refugia			
Activities			
1.1	Developing fisheries and coastal habitat information and data collection programmes		
10	Project Personnel Component		
	1100: Project Personnel	_____	_____
	1200: Consultants	_____	_____
	1600: Travel on Official business	_____	_____
20	Sub-contract Component		
	2200: Sub-contracts (MoULA's for non-profit supporting organizations)	_____	_____
	2300: Sub-contracts (commercial purposes)	_____	_____
30	Training Component		
	3200: Group training (study tours, field trips, ws, seminar, etc)	_____	_____
	3300: Meeting/Conferences	_____	_____
40	Equipment & Premises Component		
	4200: Non-expendable equipment (Computer, office equipment, etc)	_____	_____
50	Miscellaneous Component		
	5200: Reporting costs (Publications, maps, newsletters, printing, etc)	_____	_____
	5500: Evaluation (consultants fees/travel/DSA, admin support, etc)	_____	_____
	sub-activity 1.1	=====	=====
1.2	Facilitating agreement among stakeholders on the boundaries of fisheries refugia		
10	Project Personnel Component		
	1100: Project Personnel	_____	_____
	1200: Consultants	_____	_____
	1600: Travel on Official business	_____	_____
20	Sub-contract Component		
	2200: Sub-contracts (MoULA's for non-profit supporting organizations)	_____	_____
	2300: Sub-contracts (commercial purposes)	_____	_____
30	Training Component		
	3200: Group training (study tours, field trips, ws, seminar, etc)	_____	_____
	3300: Meeting/Conferences	_____	_____
40	Equipment & Premises Component		
	4200: Non-expendable equipment (Computer, office equipment, etc)	_____	_____
50	Miscellaneous Component		
	5200: Reporting costs (Publications, maps, newsletters, printing, etc)	_____	_____
	5500: Evaluation (consultants fees/travel/DSA, admin support, etc)	_____	_____
	sub-activity 1.2	=====	=====

SEAFDEC/UNEP/GEF PROJECT FOR (COUNTRY NAME)
DETAILS OF ACTIVITIES EXPENDITURES
 FOR A PERIOD: XXXX - XXXX

		2019	
		XXXX	US\$
		Local Currency	(1US\$ =)
Component I:			
Identification and management of fisheries refugia			
Activities			
1.3 Developing Community-Based Management Plans			
10	Project Personnel Component		
	1100: Project Personnel	_____	
	1200: Consultants	_____	
	1600: Travel on Official business	_____	
20	Sub-contract Component		
	2200: Sub-contracts (MoU/LA's for non-profit supporting organizations)	_____	
	2300: Sub-contracts (commercial purposes)	_____	
30	Training Component		
	3200: Group training (study tours, field trips, ws, seminar, etc)	_____	
	3300: Meeting/Conferences	_____	
40	Equipment & Premises Component		
	4200: Non-expendable equipment (Computer, office equipment, etc)	_____	
50	Miscellaneous Component		
	5200: Reporting costs (Publications, maps, newsletters, printing, etc)	_____	
	5500: Evaluation (consultants fees/travel/DSA, admin support, etc)	_____	
	sub-activity 1.3	=====	=====
1.4 Establishing operational management			
10	Project Personnel Component		
	1100: Project Personnel	_____	
	1200: Consultants	_____	
	1600: Travel on Official business	_____	
20	Sub-contract Component		
	2200: Sub-contracts (MoU/LA's for non-profit supporting organizations)	_____	
	2300: Sub-contracts (commercial purposes)	_____	
30	Training Component		
	3200: Group training (study tours, field trips, ws, seminar, etc)	_____	
	3300: Meeting/Conferences	_____	
40	Equipment & Premises Component		
	4200: Non-expendable equipment (Computer, office equipment, etc)	_____	
50	Miscellaneous Component		
	5200: Reporting costs (Publications, maps, newsletters, printing, etc)	_____	
	5500: Evaluation (consultants fees/travel/DSA, admin support, etc)	_____	
	sub-activity 1.4	=====	=====

SEAFDEC/UNEP/GEF PROJECT FOR (COUNTRY NAME)
DETAILS OF ACTIVITIES EXPENDITURES
 FOR A PERIOD. XXXX - XXXX

		2019	
		XXXX	US\$
		Local Currency	(1US\$ =)
Component I:			
Identification and management of fisheries refugia			
Activities			
1.5	Strengthening civil society and community organization participation in the management of fisheries refugia sites		
10	Project Personnel Component		
	1100: Project Personnel	_____	
	1200: Consultants	_____	
	1600: Travel on Official business	_____	
20	Sub-contract Component		
	2200: Sub-contracts (MoU/LAs for non-profit supporting organizations)	_____	
	2300: Sub-contracts (commercial purposes)	_____	
30	Training Component		
	3200: Group training (study tours, field trips, ws, seminar, etc)	_____	
	3300: Meeting/Conferences	_____	
40	Equipment & Premises Component		
	4200: Non-expendable equipment (Computer, office equipment, etc)	_____	
50	Miscellaneous Component		
	5200: Reporting costs (Publications, maps, newsletters, printing, etc)	_____	
	5500: Evaluation (consultants fees/travel/OSA, admin support, etc)	_____	
	sub-activity 1.5	=====	=====
	TOTAL COMPONENT-I	=====	=====

SEAFDEC/UNEP/GEF PROJECT FOR (COUNTRY NAME)
DETAILS OF ACTIVITIES EXPENDITURES
 FOR A PERIOD. XXXX - XXXX

		2019	
		XXXX	US\$
		Local Currency	(1US\$ =)
Component II:			
Strengthening the enabling environment & knowledge base for management			
Activities			
2.1 Enhancing policy guidance for improved management of the effects of fishing on critical habitats			
10	Project Personnel Component		
	1100: Project Personnel	_____	
	1200: Consultants	_____	
	1600: Travel on Official business	_____	
20	Sub-contract Component		
	2200: Sub-contracts (MoU/LA's for non-profit supporting organizations)	_____	
	2300: Sub-contracts (commercial purposes)	_____	
30	Training Component		
	3200: Group training (study tours, field trips, w/s, seminar, etc)	_____	
	3300: Meeting/Conferences	_____	
40	Equipment & Premises Component		
	4200: Non-expendable equipment (Computer, office equipment, etc)	_____	
50	Miscellaneous Component		
	5200: Reporting costs (Publications, maps, newsletters, printing, etc)	_____	
	5500: Evaluation (consultants fees/travel/DSA, admin support, etc)	_____	
sub-activity 2.1		=====	=====
2.2 Defining the policy and legal basis for formal designation and establishment of fisheries refugia			
10	Project Personnel Component		
	1100: Project Personnel	_____	
	1200: Consultants	_____	
	1600: Travel on Official business	_____	
20	Sub-contract Component		
	2200: Sub-contracts (MoU/LA's for non-profit supporting organizations)	_____	
	2300: Sub-contracts (commercial purposes)	_____	
30	Training Component		
	3200: Group training (study tours, field trips, w/s, seminar, etc)	_____	
	3300: Meeting/Conferences	_____	
40	Equipment & Premises Component		
	4200: Non-expendable equipment (Computer, office equipment, etc)	_____	
50	Miscellaneous Component		
	5200: Reporting costs (Publications, maps, newsletters, printing, etc)	_____	
	5500: Evaluation (consultants fees/travel/DSA, admin support, etc)	_____	
sub-activity 2.2		=====	=====

SEAFDEC/UNEP/GEF PROJECT FOR (COUNTRY NAME)
DETAILS OF ACTIVITIES EXPENDITURES
 FOR A PERIOD. XXXX - XXXX

		2019	
		XXXX	US\$
		Local Currency	(1US\$ =)
Component II:			
Strengthening the enabling environment & knowledge base for management			
Activities			
2.3	Development of national guidelines on the establishment and operation of fisheries refugia		
10	Project Personnel Component		
	1100: Project Personnel	_____	
	1200: Consultatants	_____	
	1600: Travel on Official business	_____	
20	Sub-contract Component		
	2200: Sub-contracts (MoULA's for non-profit supporting organizations)	_____	
	2300: Sub-contracts (commercial purposes)	_____	
30	Training Component		
	3200: Group training (study tours, field trips, ws, seminar, etc)	_____	
	3300: Meeting/Conferences	_____	
40	Equipment & Premises Component		
	4200: Non-expendable equipment (Computer, office equipment, etc)	_____	
50	Miscellaneous Component		
	5200: Reporting costs (Publications, maps, newsletters, printing, etc)	_____	
	5500: Evaluation (consultants fees/travel/DSA, admin support, etc)	_____	
	sub-activity 2.3	=====	=====
2.4	Reforming national policy, legal and planning frameworks for demarcating boundaries and managing refugia		
10	Project Personnel Component		
	1100: Project Personnel	_____	
	1200: Consultatants	_____	
	1600: Travel on Official business	_____	
20	Sub-contract Component		
	2200: Sub-contracts (MoULA's for non-profit supporting organizations)	_____	
	2300: Sub-contracts (commercial purposes)	_____	
30	Training Component		
	3200: Group training (study tours, field trips, ws, seminar, etc)	_____	
	3300: Meeting/Conferences	_____	
40	Equipment & Premises Component		
	4200: Non-expendable equipment (Computer, office equipment, etc)	_____	
50	Miscellaneous Component		
	5200: Reporting costs (Publications, maps, newsletters, printing, etc)	_____	
	5500: Evaluation (consultants fees/travel/DSA, admin support, etc)	_____	
	sub-activity 2.4	=====	=====

SEAFDEC/UNEP/GEF PROJECT FOR (COUNTRY NAME)
DETAILS OF ACTIVITIES EXPENDITURES
 FOR A PERIOD. XXXX - XXXX

		2019	
		XXXX	US\$
		Local Currency	(1US\$ =)
Component II:			
Strengthening the enabling environment & knowledge base for management			
Activities			
2.5	Enhancing access to information relating to status and trends in fish stocks and habitats		
10	Project Personnel Component		
	1100: Project Personnel	_____	
	1200: Consultants	_____	
	1600: Travel on Official business	_____	
20	Sub-contract Component		
	2200: Sub-contracts (MoU/LA's for non-profit supporting organizations)	_____	
	2300: Sub-contracts (commercial purposes)	_____	
30	Training Component		
	3200: Group training (study tours, field trips, ws, seminar, etc)	_____	
	3300: Meeting/Conferences	_____	
40	Equipment & Premises Component		
	4200: Non-expendable equipment (Computer, office equipment, etc)	_____	
50	Miscellaneous Component		
	5200: Reporting costs (Publications, maps, newsletters, printing, etc)	_____	
	5500: Evaluation (consultants fees/travel/DSA, admin support, etc)	_____	
	sub-activity 2.5	=====	=====
2.6	Improving national-level management and sharing of information and data on fish early life history		
10	Project Personnel Component		
	1100: Project Personnel	_____	
	1200: Consultants	_____	
	1600: Travel on Official business	_____	
20	Sub-contract Component		
	2200: Sub-contracts (MoU/LA's for non-profit supporting organizations)	_____	
	2300: Sub-contracts (commercial purposes)	_____	
30	Training Component		
	3200: Group training (study tours, field trips, ws, seminar, etc)	_____	
	3300: Meeting/Conferences	_____	
40	Equipment & Premises Component		
	4200: Non-expendable equipment (Computer, office equipment, etc)	_____	
50	Miscellaneous Component		
	5200: Reporting costs (Publications, maps, newsletters, printing, etc)	_____	
	5500: Evaluation (consultants fees/travel/DSA, admin support, etc)	_____	
	sub-activity 2.6	=====	=====

SEAFDEC/UNEP/GEF PROJECT FOR (COUNTRY NAME)
DETAILS OF ACTIVITIES EXPENDITURES
 FOR A PERIOD. XXXX - XXXX

		2019	
		XXXX	US\$
		Local Currency	(1US\$ =)
Component II:			
Strengthening the enabling environment & knowledge base for management			
Activities			
2.7 Enhancing access to information relating to the locations and status of coastal habitats and management areas			
10	Project Personnel Component		
	1100: Project Personnel	_____	
	1200: Consultatants	_____	
	1600: Travel on Official business	_____	
20	Sub-contract Component		
	2200: Sub-contracts (MoULA's for non-profit supporting organizations)	_____	
	2300: Sub-contracts (commercial purposes)	_____	
30	Training Component		
	3200: Group training (study tours, field trips, ws, seminar, etc)	_____	
	3300: Meeting/Conferences	_____	
40	Equipment & Premises Component		
	4200: Non-expendable equipment (Computer, office equipment, etc)	_____	
50	Miscellaneous Component		
	5200: Reporting costs (Publications, maps, newsletters, printing, etc)	_____	
	5500: Evaluation (consultants fees/travel/DSA, admin support, etc)	_____	
	sub-activity 2.7		
2.8 Strengthening the information base for the planning, monitoring and evaluation of management at priority fisheries refugia sites			
10	Project Personnel Component		
	1100: Project Personnel	_____	
	1200: Consultatants	_____	
	1600: Travel on Official business	_____	
20	Sub-contract Component		
	2200: Sub-contracts (MoULA's for non-profit supporting organizations)	_____	
	2300: Sub-contracts (commercial purposes)	_____	
30	Training Component		
	3200: Group training (study tours, field trips, ws, seminar, etc)	_____	
	3300: Meeting/Conferences	_____	
40	Equipment & Premises Component		
	4200: Non-expendable equipment (Computer, office equipment, etc)	_____	
50	Miscellaneous Component		
	5200: Reporting costs (Publications, maps, newsletters, printing, etc)	_____	
	5500: Evaluation (consultants fees/travel/DSA, admin support, etc)	_____	
	sub-activity 2.8		

SEAFDEC/UNEP/GEF PROJECT FOR (COUNTRY NAME)
DETAILS OF ACTIVITIES EXPENDITURES
 FOR A PERIOD: XXXX - XXXX

		2019	
		XXXX	US\$
		Local Currency	(1US\$ =)
Component II:			
Strengthening the enabling environment & knowledge base for management			
Activities			
2.9 Improved basin-wide understanding or linkages between ocean circulation patterns, nutrient/chlorophyll concentrations, and sources and sinks of fish larvae in the South China Sea			
10	Project Personnel Component		
	1100: Project Personnel		
	1200: Consultants		
	1600: Travel on Official business		
20	Sub-contract Component		
	2200: Sub-contracts (Mo/ULA's for non-profit supporting organizations)		
	2300: Sub-contracts (commercial purposes)		
30	Training Component		
	3200: Group training (study tours, field trips, ws, seminar, etc)		
	3300: Meeting/Conferences		
40	Equipment & Premises Component		
	4200: Non-expendable equipment (Computer, office equipment, etc)		
50	Miscellaneous Component		
	5200: Reporting costs (Publications, maps, newsletters, printing, etc)		
	5500: Evaluation (consultants fees/travel/DSA, admin support, etc)		
sub-activity 2.9			
2.10 Regionally and locally appropriate best practices generated to address the effects of trawl and push net fishing on seagrass habitat, and the capture of juveniles, pre-recruits and fish in spawning condition			
10	Project Personnel Component		
	1100: Project Personnel		
	1200: Consultants		
	1600: Travel on Official business		
20	Sub-contract Component		
	2200: Sub-contracts (Mo/ULA's for non-profit supporting organizations)		
	2300: Sub-contracts (commercial purposes)		
30	Training Component		
	3200: Group training (study tours, field trips, ws, seminar, etc)		
	3300: Meeting/Conferences		
40	Equipment & Premises Component		
	4200: Non-expendable equipment (Computer, office equipment, etc)		
50	Miscellaneous Component		
	5200: Reporting costs (Publications, maps, newsletters, printing, etc)		
	5500: Evaluation (consultants fees/travel/DSA, admin support, etc)		
sub-activity 2.10			
TOTAL COMPONENT-II			

**SEAFDEC/UNEP/GEF PROJECT FOR (COUNTRY NAME)
DETAILS OF ACTIVITIES EXPENDITURES
FOR A PERIOD. XXXX - XXXX**

		2019	
		XXXX	US\$
		Local Currency	(1US\$ =)
Component III:			
Information Management and Dissemination in support of national-level implementation of the fisheries refugia concept			
Activities			
3.1	Enhancing national uptake of best practices in integrating fisheries management and biodiversity conservation		
10	Project Personnel Component		
	1100: Project Personnel	_____	
	1200: Consultatants	_____	
	1600: Travel on Official business	_____	
20	Sub-contract Component		
	2200: Sub-contracts (MOU/LA's for non-profit supporting organizations)	_____	
	2300: Sub-contracts (commercial purposes)	_____	
30	Training Component		
	3200: Group training (study tours, field trips, ws, seminar, etc)	_____	
	3300: Meeting/Conferences	_____	
40	Equipment & Premises Component		
	4200: Non-expendable equipment (Computer, office equipment, etc)	_____	
50	Miscellaneous Component		
	5200: Reporting costs (Publications, maps, newsletters, printing, etc)	_____	
	5500: Evaluation (consultants fees/travel/DSA, admin support, etc)	_____	
	sub-activity 3.1	_____	_____
3.2	Improving community acceptance of area-based approaches to marine management		
10	Project Personnel Component		
	1100: Project Personnel	_____	
	1200: Consultatants	_____	
	1600: Travel on Official business	_____	
20	Sub-contract Component		
	2200: Sub-contracts (MOU/LA's for non-profit supporting organizations)	_____	
	2300: Sub-contracts (commercial purposes)	_____	
30	Training Component		
	3200: Group training (study tours, field trips, ws, seminar, etc)	_____	
	3300: Meeting/Conferences	_____	
40	Equipment & Premises Component		
	4200: Non-expendable equipment (Computer, office equipment, etc)	_____	
50	Miscellaneous Component		
	5200: Reporting costs (Publications, maps, newsletters, printing, etc)	_____	
	5500: Evaluation (consultants fees/travel/DSA, admin support, etc)	_____	
	sub-activity 3.2	_____	_____

**SEAFDEC/UNEP/GEF PROJECT FOR (COUNTRY NAME)
 DETAILS OF ACTIVITIES EXPENDITURES
 FOR A PERIOD. XXXX - XXXX**

		2019	
		XXXX	US\$
		Local Currency	(1US\$ =)
Component III:			
Information Management and Dissemination in support of national-level implementation of the fisheries refugia concept			
Activities			
3.3	Knowledge generated & experiences from establishing and operating fisheries refugia captured & shared nationally, regionally, & globally		
10	Project Personnel Component		
	1100: Project Personnel	_____	
	1200: Consultants	_____	
	1600: Travel on Official business	_____	
20	Sub-contract Component		
	2200: Sub-contracts (MoU/LA's for non-profit supporting organizations)	_____	
	2300: Sub-contracts (commercial purposes)	_____	
30	Training Component		
	3200: Group training (study tours, field trips, ws, seminar, etc)	_____	
	3300: Meeting/Conferences	_____	
40	Equipment & Premises Component		
	4200: Non-expendable equipment (Computer, office equipment, etc)	_____	
50	Miscellaneous Component		
	5200: Reporting costs (Publications, maps, newsletters, printing, etc)	_____	
	5500: Evaluation (consultants fees/travel/DSA, admin support, etc)	_____	
	sub-activity 3.3	=====	=====

SEAFDEC/UNEP/GEF PROJECT FOR (COUNTRY NAME)
DETAILS OF ACTIVITIES EXPENDITURES
 FOR A PERIOD. XXXX - XXXX

		2019	
		XXXX	US\$
		Local Currency	(1US\$ =)
Component III:			
Information Management and Dissemination in support of national-level implementation of the fisheries refugia concept			
Activities			
3.4 Information and Education Campaigns for small-scale fisherfolk on the links between fisheries, habitats and biodiversity			
10	Project Personnel Component		
	1100: Project Personnel	_____	
	1200: Consultatants	_____	
	1600: Travel on Official business	_____	
20	Sub-contract Component		
	2200: Sub-contracts (MoULA's for non-profit supporting organizations)	_____	
	2300: Sub-contracts (commercial purposes)	_____	
30	Training Component		
	3200: Group training (study tours, field trips, ws, seminar, etc)	_____	
	3300: Meeting/Conferences	_____	
40	Equipment & Premises Component		
	4200: Non-expendable equipment (Computer, office equipment, etc)	_____	
50	Miscellaneous Component		
	5200: Reporting costs (Publications, maps, newsletters, printing, etc)	_____	
	5500: Evaluation (consultants fees/travel/DSA, admin support, etc)	_____	
sub-activity 3.4		=====	=====
3.5 Standardised methods for collection and analysis of info and data on refugia effectiveness (including indicator system)			
10	Project Personnel Component		
	1100: Project Personnel	_____	
	1200: Consultatants	_____	
	1600: Travel on Official business	_____	
20	Sub-contract Component		
	2200: Sub-contracts (MoULA's for non-profit supporting organizations)	_____	
	2300: Sub-contracts (commercial purposes)	_____	
30	Training Component		
	3200: Group training (study tours, field trips, ws, seminar, etc)	_____	
	3300: Meeting/Conferences	_____	
40	Equipment & Premises Component		
	4200: Non-expendable equipment (Computer, office equipment, etc)	_____	
50	Miscellaneous Component		
	5200: Reporting costs (Publications, maps, newsletters, printing, etc)	_____	
	5500: Evaluation (consultants fees/travel/DSA, admin support, etc)	_____	
sub-activity 3.5		=====	=====
TOTAL COMPONENT-III		=====	=====

SEAFDEC/UNEP/GEF PROJECT FOR (COUNTRY NAME)
DETAILS OF ACTIVITIES EXPENDITURES
 FOR A PERIOD. XXXX - XXXX

	2019	
	XXXX	US\$
	Local Currency	(1US\$ =)
Component IV:		
National coordination for integrated fish stock and critical habitat management		
Activities		
4.1 Strengthened cross-sectoral coordination in the establishment and operation of fisheries refugia		
10 Project Personnel Component		
1100: Project Personnel	_____	
1200: Consultants	_____	
1600: Travel on Official business	_____	
20 Sub-contract Component		
2200: Sub-contracts (MoU/LA's for non-profit supporting organizations)	_____	
2300: Sub-contracts (commercial purposes)	_____	
30 Training Component		
3200: Group training (study tours, field trips, ws, seminar, etc)	_____	
3300: Meeting/Conferences	_____	
40 Equipment & Premises Component		
4200: Non-expendable equipment (Computer, office equipment, etc)	_____	
50 Miscellaneous Component		
5200: Reporting costs (Publications, maps, newsletters, printing, etc)	_____	
5500: Evaluation (consultants fees/travel/DSA, admin support, etc)	_____	
sub-activity 4.1	=====	=====
4.2 Harnessing national scientific and technical expertise and knowledge to inform policy, legal and institutional reforms for fisheries refugia		
10 Project Personnel Component		
1100: Project Personnel	_____	
1200: Consultants	_____	
1600: Travel on Official business	_____	
20 Sub-contract Component		
2200: Sub-contracts (MoU/LA's for non-profit supporting organizations)	_____	
2300: Sub-contracts (commercial purposes)	_____	
30 Training Component		
3200: Group training (study tours, field trips, ws, seminar, etc)	_____	
3300: Meeting/Conferences	_____	
40 Equipment & Premises Component		
4200: Non-expendable equipment (Computer, office equipment, etc)	_____	
50 Miscellaneous Component		
5200: Reporting costs (Publications, maps, newsletters, printing, etc)	_____	
5500: Evaluation (consultants fees/travel/DSA, admin support, etc)	_____	
sub-activity 4.2	=====	=====

SEAFDEC/UNEP/GEF PROJECT FOR (COUNTRY NAME)
DETAILS OF ACTIVITIES EXPENDITURES
 FOR A PERIOD. XXXX - XXXX

		2019	
		XXXX	US\$
		Local Currency	(1US\$ =)
Component IV:			
National coordination for integrated fish stock and critical habitat management			
Activities			
4.3 Catalyzing local community action via establishment and operation of site-based management boards at priority refugia sites			
10	Project Personnel Component		
	1100: Project Personnel	_____	
	1200: Consultants	_____	
	1600: Travel on Official business	_____	
20	Sub-contract Component		
	2200: Sub-contracts (MoU/LA's for non-profit supporting organizations)	_____	
	2300: Sub-contracts (commercial purposes)	_____	
30	Training Component		
	3200: Group training (study tours, field trips, w/s, seminar, etc)	_____	
	3300: Meeting/Conferences	_____	
40	Equipment & Premises Component		
	4200: Non-expendable equipment (Computer, office equipment, etc)	_____	
50	Miscellaneous Component		
	5200: Reporting costs (Publications, maps, newsletters, printing, etc)	_____	
	5500: Evaluation (consultants fees/travel/DSA, admin support, etc)	_____	
sub-activity 4.3		=====	=====
4.4 Regional cooperation in the integration of scientific knowledge and research outputs with management			
10	Project Personnel Component		
	1100: Project Personnel	_____	
	1200: Consultants	_____	
	1600: Travel on Official business	_____	
20	Sub-contract Component		
	2200: Sub-contracts (MoU/LA's for non-profit supporting organizations)	_____	
	2300: Sub-contracts (commercial purposes)	_____	
30	Training Component		
	3200: Group training (study tours, field trips, w/s, seminar, etc)	_____	
	3300: Meeting/Conferences	_____	
40	Equipment & Premises Component		
	4200: Non-expendable equipment (Computer, office equipment, etc)	_____	
50	Miscellaneous Component		
	5200: Reporting costs (Publications, maps, newsletters, printing, etc)	_____	
	5500: Evaluation (consultants fees/travel/DSA, admin support, etc)	_____	
sub-activity 4.4		=====	=====

SEAFDEC/UNEP/GEF PROJECT FOR (CONTRY NAME)
DETAILS OF ACTIVITIES EXPENDITURES
 FOR A PERIOD. XXXX - XXXX

		2019	
		XXXX	US\$
		Local Currency	(1US\$ =)
Component IV:			
National coordination for integrated fish stock and critical habitat management			
Activities			
4.5 Regional cooperation in the establishment and operation of a regional system of fisheries refugia			
10	Project Personnel Component		
	1100: Project Personnel	_____	
	1200: Consultatants	_____	
	1600: Travel on Official business	_____	
20	Sub-contract Component		
	2200: Sub-contracts (MoU/LA's for non-profit supporting organizations)	_____	
	2300: Sub-contracts (commercial purposes)	_____	
30	Training Component		
	3200: Group training (study tours, field trips, ws, seminar, etc)	_____	
	3300: Meeting/Conferences	_____	
40	Equipment & Premises Component		
	4200: Non-expendable equipment (Computer, office equipment, etc)	_____	
50	Miscellaneous Component		
	5200: Reporting costs (Publications, maps, newsletters, printing, etc)	_____	
	5500: Evaluation (consultants fees/travel/DSA, admin support, etc)	_____	
sub-activity 4.5		=====	=====
4.6 Effective coordination of regional and national level activities and			
10	Project Personnel Component		
	1100: Project Personnel	_____	
	1200: Consultatants	_____	
	1600: Travel on Official business	_____	
20	Sub-contract Component		
	2200: Sub-contracts (MoU/LA's for non-profit supporting organizations)	_____	
	2300: Sub-contracts (commercial purposes)	_____	
30	Training Component		
	3200: Group training (study tours, field trips, ws, seminar, etc)	_____	
	3300: Meeting/Conferences	_____	
40	Equipment & Premises Component		
	4200: Non-expendable equipment (Computer, office equipment, etc)	_____	
50	Miscellaneous Component		
	5200: Reporting costs (Publications, maps, newsletters, printing, etc)	_____	
	5500: Evaluation (consultants fees/travel/DSA, admin support, etc)	_____	
sub-activity 4.6		=====	=====
TOTAL COMPONENT-IV		=====	=====

ANNEX 18: NON-EXPENDABLE EQUIPMENTS

CONSIDERATION AND ACTION BY THE PSC

This paper aims to inform the project steering committee on the expenditures for non-expendable equipment since 2016 till present (as of 31 September 2019) as appears in the **Appendix 5, 6, 7, and 8** for the year 2016, 2017, 2018 and 2019, respectively. Additionally, the committee is requested to consider and endorsement the list of non-expendable equipment of 2020 proposed by countries and PCU as follows:

REQUESTED BUDGET FOR NON-EXPENDABLE EQUIPMENT FOR 2020

1) INDONESIA:

LIST OF NONE-EXPENDABLE EQUIPMENT: (Description/Model, price in USD)

ITEM	EQUIPMENT	DESCRIPTION	UNIT	PRICE/UNIT (USD)	TOTAL COST (USD)
1	DRONE	DJI MOVIC PRO	1	1,103	1,103
2	LAPTOP	Hp Laptop Spectre x360 Conve 13-ap0055 TU/i7/512 GB SSD/16 GB/FHD TS – PVCY/UMA/W10/Blue. HP Sure View Integrated Privacy Screen 13.3" diagonal FHD IPS anti-glare micro-edge WLED-backlit touch screen (1920 x 1080).	2	1,750	3,500
3	PRINTER	Canon G3010 (Tabung Infus Model) (Print , Scan, Copy, Wifi)	1	172	172
4	Cabinet	Filling cabinet BROTHER	1	207	207
				Total	4,982

2) VIET NAM:

LIST OF NONE-EXPENDABLE EQUIPMENT: (Description/Model, price in USD)

ITEM	EQUIPMENT	DESCRIPTION	UNIT	PRICE/UNIT (USD)	TOTAL COST (USD)
1	LAPTOP	HP Envy 13,	3	850	2,550
2	PROJECTOR	CASIO XJ-A142	1	850	830
				Total	3,380

3) PHILIPPINES

LIST OF NONE-EXPENDABLE EQUIPMENT: (Description/Model, price in USD)

ITEM	EQUIPMENT	DESCRIPTION	UNIT	PRICE/UNIT (USD)	TOTAL COST (USD)
1	CAMERA	Nikon Coolpix P1000	1	1,000	1,000
				Total	1,000

APPENDIX 5
List of None-Expendable Equipment for 2016

INVENTORY OF NON EXPANDABLE EQUIPMENT PURCHASE							
UNIT VALUE US\$ 1,000 AND ABOVE							
Project title:	Establishment and Operation of a Regional System of Fisheries Refugia in the South China Sea and Gulf of Thailand						
Project number:	GFL-2328-pppp-nnnn						
Project executing partner:	Southeast Asian Fisheries Development Centre (SEAFDEC)						
Project implementation period:	From :	Oct-16	To :	Dec-20			
Report as at (ddmmyyy):	31/12/2016		Exchange rate	35.54	THB/1USD		
Description	Serial No.	Date of purchase	Original Price (USD)	Purchased/ Imported from (name of country)	Present condition	Location	Remarks/ Recommendation for disposal
NOTEBOOK, CPU CORE I7-6500U,SSD 512, RAM 8GB, 13.3"	LENOVO PFOECYYG	28/10/16	1,683	Thailand	followed up	Mr. Christopher	3-8-1379
TOUCH MOUSE (ORANGE)	LENOVO OL161346110485	28/10/16	-	Thailand	good	Mr. Christopher	3-8-1379A
USB-C TO HDMI ADAPTOR-ROW	GX90K37870Z14220EX	28/10/16	-	Thailand	good	Mr. Christopher	3-8-1379B
NOTEBOOK CPU CORE I7, RAM 8GB, 256 GB SSD, 11.6"	LENOVO PFOK9QEV	28/10/16	971	Thailand	good	CENTER	3-8-1380
NOTEBOOK CPU CORE I7, RAM 8GB, 256 GB SSD, 11.6"	LENOVO PFOK9QHK	28/10/16	971	Thailand	good	Ms. Nathacha	3-8-1381
NOTEBOOK CPU CORE I7, RAM 8GB, 256 GB SSD, 11.6"	LENOVO PFOK9SM8	28/10/16	971	Thailand	good	Mr. Weerasak	3-8-1382
HDD. EXTERNAL.2 TB, 2.5" USB 3.0, BLACK	WESTERN WXS1E741N32D	28/10/16	101	Thailand	good	Mr. Christopher	3-8-1383
HDD. EXTERNAL.2 TB, 2.5" USB 3.0, BLACK	WESTERN WX31E36EZD84	28/10/16	101	Thailand	good	Mr. Weerasak	3-8-1384
HDD. EXTERNAL.2 TB, 2.5" USB 3.0, BLACK	WESTERN WXT1EA5A8P4H	28/10/16	101	Thailand	good	Ms. Nathacha	3-8-1385
PRINTER, MULTIFUNCTION, WIFI, DUPLEX, BLACK&WHITE	HP CND8J922LY	28/10/16	780	Thailand	good	CENTER	3-8-1386
KEYBOARD & MOUSE WIRELESS COMBO	LOGITECH 1636SC10R2A8	28/10/16	30	Thailand	good	Mr. Weerasak	3-8-1387
KEYBOARD & MOUSE WIRELESS COMBO	LOGITECH 1636SC10Q0H8	28/10/16	30	Thailand	good	Mr. Christopher	3-8-1388
KEYBOARD & MOUSE WIRELESS COMBO	LOGITECH 1636SC10Q0J8	28/10/16	30	Thailand	good	Ms. Nathacha	3-8-1389
KEYBOARD & MOUSE WIRELESS COMBO	LOGITECH 1636SC10R278	28/10/16	30	Thailand	good	CENTER	3-8-1390
CABINET, WOODEN (OPEN FILE SHELF/4) 80X160X36 CM.		16/11/16	120	Thailand	Good	CENTER	4-4-284
CABINET, WOODEN (OPEN FILE SHELF/4) 80X160X36 CM.		16/11/16	120	Thailand	Good	CENTER	4-4-285
CABINET, WOODEN (OPEN FILE SHELF/4) 80X160X36 CM.		16/11/16	120	Thailand	Good	CENTER	4-4-286
MIRRORLESS DIGITAL CAMERA WITH FE-28-70 MM.	SONY 4507933	17/11/16	1,688	Thailand	Good	CENTER	6-1-655
EXTREMEPRO MICRO SDHC UHS-I CARD, 128GB	SANDISK 805612859-128	17/11/16	96	Thailand	Good	CENTER	6-1-655A
EXTREMEPRO MICRO SDHC UHS-I CARD, 128GB	SANDISK 805612859-128	17/11/16	96	Thailand	Good	CENTER	6-1-655B
UHF WIRELESS MICROPHONE SYSTEM SET (2 PCS.)	BOYA BY16019615	17/11/16	210	Thailand	Good	CENTER	6-1-656
REFRIGERATOR, 6.2 CU.FT., SILVER	TOSHIBA 1160607000298	30/11/16	174	Thailand	Good	CENTER	3-1-103
CABINET,STEEL 2 GLASS DOOR, GRAY	FURRADEC 118.5X40.7X88 CM.	6/12/16	106	Thailand	Good	Ms. Kwannuen	4-4-287
TRIPOD PROJECTION SCREEN, MOTORIZED,NO REMOTE	GYGAR 20130123ES100VMS01MW76W0368	21/12/16	118	Thailand	Good	CENTER	6-1-657
Microsoft Office 365 for business		19/11/16	495.00			CENTER	Ref- A001
Project Banner		24/11/16	85.00			CENTER	Ref- A002
Total (as per Budget Line 4299)			9,226.11	USD			
The physical verification of the items was done by:							
Name :	Somboon Siriraksophon			Signature :			
	(duly authorized official of Executing Division)						
Title :	Project Director			Date: 31-Dec-16			

APPENDIX 6

List of None-Expendable Equipment for 2017

INVENTORY OF NON EXPANDABLE EQUIPMENT PURCHASE									
UNIT VALUE US\$ 1,000 AND ABOVE									
Project title:	Establishment and Operation of a Regional System of Fisheries Refugia in the South China Sea and Gulf of Thailand								
Project number:	GFL-2328-pppp-nnnn								
Project executing partner:	Southeast Asian Fisheries Development Centre (SEAFDEC)								
Project implementation period:	From :	Jan-17			To :	Dec-20			
Report as at (ddmmyy):	31-Dec-17			Exchange rate	32.4	THB/1USD			
Description	Serial No.		Date of purchase	Original Price (USD)	Purchased/ Imported from (name of country)	Present condition	Location	Remarks/ Recommendation for disposal	
PROJECTOR LED 3000 ANSI,1280X800 (WGA),SLIM,WHITE	CASIO	ED450EBY6C-130043	6/1/17	1,694.44	Thailand	Good	CENTER	6-1-658	
COMPUTER, NOTEBOOK, CORE I5-7200U, 512 GB, 4 GB, 13.3", GOLD	LENOVO	DEAWD 110S-138B R90M9W05	28/7/2017	799.00	CAMBODIA	GOOD	Kim Sokha, FIA, Cambodia	FR-PCU-3-8-1464	
COMPUTER, NOTEBOOK, CORE I5-7200U, 512 GB, 4 GB, 13.3", GOLD	LENOVO	DEAWD 110S-138B R90M9VZS	28/7/2017	799.00	CAMBODIA	GOOD	Leng Sy Vann, FIA, Cambodia	FR-PCU-3-8-1455	
COMPUTER, NOTEBOOK, CORE I5-7200U, 512 GB, 4 GB, 13.3", GOLD	LENOVO	DEAWD 110S-138B R90M9W07	29/7/2017	799.00	CAMBODIA	GOOD	Leakhena, FIA, Cambodia	FR-PCU-3-8-1456	
COMPUTER, NOTEBOOK, CORE I5-7200U, 512 GB, 4 GB, 13.3", GOLD	LENOVO	DEAWD 110S-138B R90M9B0	30/7/2017	799.00	CAMBODIA	GOOD	Ouk Vibol, FIA, Cambodia	FR-PCU-3-8-1457	
COMPUTER (NON MONITOR), INTEL CORE I5-7400, 4 GB DDR4, HDD 1 TB, BLACK	LENOVO	DEACBNT8R 510-159L R303WE2M	8/9/2017	508.58	THAILAND	GOOD	DOF, Thailand	FR-PCU-3-8-1450	
MONITOR LED, 19.5", THINK VERSION	LENOVO	E2054 W540169	8/9/2017	166.77	THAILAND	GOOD	DOF, Thailand	FR-PCU-3-8-1450A	
PRINTER, ALL IN ONE, COPY, SCAN, FAX, 4 C., BLACK	CANON	E460 K90Y22280	8/9/2017	128.80	THAILAND	GOOD	DOF, Thailand	FR-PCU-3-8-1451	
NOTEBOOK, CORE I5-7200U, 1 TB, 8 GB, 14", GREY	LENOVO	DEAWD 520S-1419B MP19AG9Z	8/9/2017	776.08	THAILAND	GOOD	DOF, Thailand	FR-PCU-3-8-1456	
TABLET + SD Card	Samsung	984P555 R52J815XD8B	8/9/2017	360.80	THAILAND	GOOD	DOF, Thailand	FR-PCU-3-8-1463	
WATER COLD, ELECTRIC	SHARP	98-295 60011824	8/9/2017	184.88	THAILAND	GOOD	DOF, Thailand	FR-PCU-4-1-107	
DESK, WOODEN, 2 DRAWERS, DARKCHERRY	DECENT	DC9120P	8/9/2017	92.59	THAILAND	GOOD	DOF, Thailand	FR-PCU-4-1-635	
CABINE, STEEL FILE, 2 DRAWERS (GLASS DOOR) (CREAM)	SPACE PRO	91.7x45.7x182.9	8/9/2017	181.48	THAILAND	GOOD	DOF, Thailand	FR-PCU-4-4-289	
CABINE, STEEL FILE, 2 DRAWERS (GLASS DOOR) (CREAM)	SPACE PRO	91.7x45.7x182.9	8/9/2017	181.48	THAILAND	GOOD	DOF, Thailand	FR-PCU-4-4-290	
ARMCHAIR, STEEL, CUSHION BLACK	MOOO	9A-47	8/9/2017	49.38	THAILAND	GOOD	DOF, Thailand	FR-PCU-4-3-1892	
COMPUTER, NOTEBOOK, CORE I5-7200U, 1 TB, 8 GB, 14", GREY	LENOVO	DEAWD 520S-1419B MP198QJ5	8/9/2017	776.08	THAILAND	GOOD	NFRD/ PHILIPPINES	FR-PCU-3-8-1454	
COMPUTER, NOTEBOOK, CORE I5-7200U, 1 TB, 8 GB, 14", GREY	LENOVO	DEAWD 520S-1419B MP19AGWB	8/9/2017	776.08	THAILAND	GOOD	NFRD/ PHILIPPINES	FR-PCU-3-8-1455	
PRINTER, PORTABLE, WIFI, BLACK	CANON	P110 AEXH00703	8/9/2017	293.92	THAILAND	GOOD	NFRD/ PHILIPPINES	FR-PCU-3-8-1449	
PROJECTOR, BUILD IN WIRELESS, FULL HD, SLIM, SILVER	EPSON	EB-1795F X3TP7500041	8/9/2017	1,172.38	THAILAND	GOOD	NFRD/ PHILIPPINES	FR-PCU-4-1-672	
STATIONARY (FOLDERS, OTHERS)				1,064.38	THAILAND		FINANCE OFFICE		
Total (as per Budget Line 4299)				11,604.13	USD				
The physical verification of the items was done by:									
Name :	Somboon Siriraksophon				Signature :				
	(duly authorized official of Executing Division)								
Title :	Project Director				Date:		31-Dec-17		

APPENDIX 7

List of None-Expendable Equipment for 2018

INVENTORY OF NON EXPANDABLE EQUIPMENT PURCHASE									
UNIT VALUE US\$ 1,000 AND ABOVE									
Project title:	Establishment and Operation of a Regional System of Fisheries Refugia in the South China Sea and Gulf of Thailand								
Project number:	GFL-2328-pppp-nnnn								
Project executing partner:	Southeast Asian Fisheries Development Centre (SEAFDEC)								
Project implementation period:	From :	Jan-17			To :	Dec-20			
Report as at (ddmmyy):	31-Dec-18				Exchange Rate	32.15 THB/1USD			
Description	Serial No.			Date of purchase	Original Price (USD)	Purchased/ Imported from (name of country)	Present condition	Location	Remarks/ Recommendation for disposal
MULTIPOINT VIDEO ADAPTOR USB-C TO HDMI, BLACK	TARGUS	ACA829	1612000943	7/7/18	68.12	THAILAND	GOOD	PCU, SOMBOON	3-8-1496B
MOBILE WIFI, 4G, BLACK-GOLD WIRELESS AIRCARD	HUAWEI	ES885	80DDU1832800212 8	13/7/18	145.63	THAILAND	GOOD	PCU/CENTER	3-8-1497
NOTEBOOK, COMPUTER, MACBOOK PRO 15.4", INTLE CORE I-7, GDDR5-4GB, SSD256	MACINTOSH APPLE	M1707	C02WT19BHTD5	09-Jul-18	2,671.85	THAILAND	GOOD	PCU, SOMBOON	3-8-1496
MAGIC MOUSE	APPLE			09-Jul-18	87.10	THAILAND	GOOD	PCU, SOMBOON	
STATIONARY (FOLDERS, OTHERS)					325.04	THAILAND		FINANCE OFFICE	
PRINTER EPSON 360L	EPSON	C462H	X5C3233576	27/8/2018	195.00	CAMBODIA	GOOD	FIA /CAMBODIA	purchased by FIA/Cambodia
PRINTER EPSON 360L	EPSON	C462H	X5C3147379	27/8/2018	195.00	CAMBODIA	GOOD	FIA /CAMBODIA	purchased by FIA/Cambodia
CABINET	FC	A1B		27/8/2018	180.00	CAMBODIA	GOOD	FIA /CAMBODIA	purchased by FIA/Cambodia
Total (as per Budget Line 4299)					3,867.74	USD			
The physical verification of the items was done by:									
Name :	Somboon Siriraksophon				Signature :				
	(duly authorized official of Executing Division)								
Title :	Project Director				DATE	31-Dec-18			

APPENDIX 8

List of None-Expendable Equipment for 2019 (as of September 2019)

INVENTORY OF NON EXPANDABLE EQUIPMENT PURCHASE									
UNIT VALUE US\$ 1,000 AND ABOVE									
Project title:	Establishment and Operation of a Regional System of Fisheries Refugia in the South China Sea and Gulf of Thailand								
Project number:	GFL-2328-pppp-nnnn								
Project executing partner:	Southeast Asian Fisheries Development Centre (SEAFDEC)								
Project implementation period:	From :	Jan-17			To :	Dec-19			
Report as at (ddmmyyy):	30-Sep-19			Exchange Rate	32.15 THB/1USD				
Description	Serial No.			Date of purchase	Original Price (USD)	Purchased/Imported from (name of country)	Present condition	Location	Remarks/Recommendation for disposal
Drone - DJI Mavic pro Combo.				Feb-19	1,250.00	Thailand	Very good	FIA/Cambodia	
UPS 1000VA (1kVA) 550W, BLACK	CLEANLINE	L-1000C	19CB300299	5-Apr-19	83.40	Thailand	Very good	PCU/Finance	3-8-1552
UPS 1000VA (1kVA) 550W, BLACK	CLEANLINE	L-1000C	19CB300300	5-Apr-19	83.40	Thailand	Very good	PCU Office	3-8-1553
PRINTER WIFI DUPLEX ALL IN ONE INK TANK PRINTER	EPSON	L6190	X4CW010051	5-Apr-19	428.93	Thailand	Very good	PCU Office	3-8-1554
DISKSTATION 2 BAY, INTEL PENTIUM QUAD CORE 1.6GHz DDR3L 4G, (WD MY CLOUD PRO PR2100 NAS/2BAY)	NAS	PR2100	WNAP27480020	1-Apr-19	855.18	Thailand	Very good	PCU Office	3-8-1562
HDD 3 TB BARRACUDA, 3.5 " GREEN	SEAGATE	ST3000DM0073Y		25-Mar-19	120.90	Thailand	Very good	PCU Office	3-8-1563
HDD 3 TB BARRACUDA, 3.5" GREEN	SEAGATE	ST3000DM0073Y		25-Mar-19	120.90	Thailand	Very good	PCU Office	3-8-1564
TELEVISION LED 32" DIGITALTV 2 HDMI	PROVISION	LT32G22		27-Mar-19	123.76	Thailand	Very good	PCU Office	6-1-719
TELEVISION LED 32" DIGITALTV 2 HDMI	PROVISION	LT32G22		27-Mar-19	123.76	Thailand	Very good	PCU Office	6-1-720
SSD 1TB SATAIII WD BLUE 3D NAND 7mm R560/W	WD	WDS100T2B0A-00SM50		17/4/2019	198.00	Thailand	Very good	PCU Office,SS	NONE
Total (as per Budget Line 4299)					3,388.22	USD			
The physical verification of the items was done by:									
Name :	Somboon Siriraksophon				Signature :				
	(duly authorized official of Executing Division)								
Title :	Project Director				Date:	10-Oct-19			

ANNEX 19: PROJECT CONCEPT (FOR REVIEW)

Improving Healthy Ocean Ecosystems through Best Practices in Trawl Fisheries

I. INTRODUCTION

Bottom trawl remains one of the major fishing gears in Southeast Asia that contributes to high fisheries production making many countries in the region among the top ten highest producers of fish in the world. However, the perceived lack of selectivity of the trawl net and the resultant capture of huge quantities and diversity of non-target species, including endangered species, coupled with its significant effect on the environment as overfishing threatens fish stocks globally, reduces biodiversity, alters the ecosystem functioning, and jeopardizes the food security and livelihoods of people.

Although, modern gear, materials, practices, and management of bottom trawling have gone a long way in reducing the catch of unwanted species and the environmental damage caused by trawl fishing, their impacts on the marine environment that include degradation of the bottom/seabed habitats, spread of marine plastic debris, and occurrence of microplastics from lost or abandoned trawl nets, have not undergone changes until the present. In addition, the existing large numbers of traditional trawlers in Southeast Asia, about 40,000 are still active, add to the increased emission of CO₂ into the air. These negative trends will intensify through time if major measures are not taken to address those mentioned impacts.

To solve these problems, the project considers four main actions that are urgently needed: the promotion of effective trawl fisheries management policies, development of innovative trawl technology, reduction of carbon footprint in fisheries, and creation of the artificial habitats to protect demersal fish stocks in the affected offshore areas. Given that, the enormous impacts of bottom trawl fishing on the health of the oceans should be impeded, particularly the alterations caused on the seabed habitats and in marine biodiversity on the continental shelf of Southeast Asia (Sunda Shelf). Such evidence is also necessary to effectively assess and manage the environmental impacts of fishing methods and to address tradeoffs given that bottom trawl fishing makes a substantial contribution to human food supply in the world market.

II. REVIEWS

The South China Sea and Gulf of Thailand are geographically located on the important Sunda Shelf as a southeast extension of the continental shelf of Southeast Asia that includes the Malay Peninsula, Sumatra, Borneo, Java, Madura, Bali, and their surrounding smaller islands (Ben-Avraham 1973). It covers an area of approximately 1.85 million km² (Van Bemmelen 1949) and comprises large fishing areas suitable for bottom trawl fishing since the past.

Bottom trawl fishing in Southeast Asia has emerged since early 1970s, as a major industrialized fishing method, and became a dominant fishing method in offshore and coastal areas. Rapid expansion of trawl fishing effort, conversion of vessels, expansion of the geographical range of fishing, and retention of most animals caught have resulted in rapid depletion of stocks and changes to stock composition, destroying critical habitats, causing high impacts on benthic communities, catching of bycatch species, threatening and endangering major aquatic species, and even altering the associated ecological communities (Kongprom *et.al.* 2003; Nurhakim 2003; Campos 2003). This declining trend is compatible however with the fishing 'down marine food web', reported from well-studied parts of the South China Sea, notably the Gulf of Thailand (Christensen *et.al.* 2003).

In terms of socioeconomic impacts, more valuable fish caught by bottom trawl fisheries has decreased sharply and that there has been proportionate increase in smaller, less valuable species. These results provide a clear picture of the extent of stock rehabilitation and management efforts that are required to restore the maximum economic value to the fisheries of the region (Silvestre *et.al.* 2003).

On carbon footprint in fisheries, global fisheries burned almost 200 billion liters of fuel in 2016 compared to 47 billion liters in 1950 (Greet *et.al.* 2019). The most fuel-intensive fishing practices not only

contribute most to the damaged seabed habitats and reef formations but also worsen the impacts of climate change. Bottom trawling techniques are the most fuel intensive fishing techniques. Additionally, the intensity of fuel consumption by fisheries in the Southeast Asia is high about 500-2000 liters km⁻² (EC 2007) compared to the other regions in the world. Reducing the carbon footprint of fisheries, particularly in bottom trawling with less fuel consumption and causing less impact from trawling is therefore needed.

Achieving effective fisheries management for bottom trawling is therefore increasingly important as overfishing threatens fish stocks globally, reduces biodiversity, alters ecosystem functioning, and jeopardizes the food security and livelihoods of hundreds of millions of people worldwide (Golden et al. 2016; Jackson et al. 2001; Pauly et al 2005; Szuwalski et al. 2017; World Bank 2009). As such, the Project intends to come up with effective fisheries management policies, innovative technology for best practices, reduction of carbon footprint, and stock rehabilitation programs.

III. PROJECT DESCRIPTION

This project concept note entitled “**Improving Healthy Ocean Ecosystems through Best Practices in Trawl Fisheries in the South China Sea and Gulf of Thailand**” (FishTrawl) is being developed to meet the need for Strategic Action Program for the South China Sea. The FishTrawl Project would be executed regionally by the Southeast Asian Fisheries Development Center (SEAFDEC) in partnership with the government agencies responsible for fisheries in the 6 participating countries: namely Cambodia, Indonesia, Malaysia, Philippines, Thailand, and Viet Nam.

The FishTrawl Project integrates the ecosystem-based fisheries management approach through the development of effective national/regional fishery policies on sustainable fisheries and innovative technology for bottom trawl gears and methods including reduction of green-house gas emission from fishing activities. Additionally, building partnerships between multiple public and private sectors, *e.g.* local government/communities, research institutions, net makers, fisheries associations, fish meal industry, fish processors, etc. would be among the approaches to improve and change this production practice into more environmentally positive. The Project includes resources enhancement activities that aim to create offshore artificial habitats or artificial reefs to protect some demersal fish stocks due to loss of seabed habitats affected by the bottom trawl net. Cooperation among country partners and concerned inter-agencies that have the existing programs to deploy artificial reefs along the coastal areas for small scale fisheries is also needed taking into account the offshore demersal fish stocks that have already been depleted. The Project shall comprise the following 4 project components:

Component 1 will consider the results of the impact assessment and management of bottom trawl fisheries through enhanced social dimensions and developed effective fisheries management policies. The outcome of this component is improved baseline data collection and effective fisheries management policies through enhancement of Data Management System. Taking into account the social dimensions concerns, the economic value of fishes and economic efficiency in the industries as well as data collection and management are improved for long term achievements of the Project. Supporting activities are:

- 1.1. Closing the knowledge gap on the ecosystem/environmental impacts of bottom trawling via baseline data collection and evaluation, and establishment of the data management system
- 1.2. Reduction of the pressures of bottom trawling on marine ecosystem and environment via adoption of effective fisheries management policies at national and regional levels
- 1.3. Catalyzing the public-private sectors on the actions via the ecosystem-based fisheries management to build resilient fishery resources and reduce the impacts of bottom trawling via enhanced stakeholder engagement taking into account gender mainstreaming in fisheries management
- 1.4. Establishment of cross-sectorial agreement on national guidelines for effective management of bottom trawl fishing
- 1.5. Endorsement of policy, legal, and planning frameworks, both at national and regional levels, for improving the ecosystem health through best practices in trawl fisheries

- 1.6 Improvement of economic efficiency in the industry and the individual fishers via enhanced traceability system along the value chain of fish and fishery products from bottom trawling
- 1.7 Increasing the economic value of fishes from medium scale bottom trawlers via promotion of marketing and branding as well as marine tourism at local communities;
- 1.8 Sharing of the knowledge and lessons learned to serve as useful platforms for data and information management for utilization by various stakeholders, the wider public and practitioners

Component 2 focuses on improving the bottom trawl fishing gears and methods to be more eco-friendly and fuel-efficient gears through the development of innovative technology and best practices. The outcome of this component is reduced effects of bottom trawling on seafloor/benthic habitats and on the air quality through enhanced innovative technology and best practices in trawl fisheries. Supporting activities are:

- 2.1 Mitigation of the impacts of bottom trawling on marine ecosystem including the seabed habitats, fish stocks, by-catch, ghost fishing, etc. via enhanced ecosystem-friendly fishing gears and methods, bottom trawl innovations, and use of alternative fishing gears;
- 2.2 Enhancement of energy saving trawling including the low impact and fuel efficient fishing through innovative technology for increased fuel-efficient gear and reduced energy consumption or carbon footprint;
- 2.3 Reduction of post-harvest losses from bottom trawlers through improved preservation technology and increased quality of catches;
- 2.4 Enhancement of public-private partnership on innovative and eco-friendly technology through creation of business opportunities and economic considerations;
- 2.5 Building the capacity and knowledge specifically in the field by collaborating with stakeholders for exchanging of the best practices;

Component 3 focuses on rehabilitation of the seabed habitats and fisheries resources enhancement in the offshore areas via installation of artificial reefs. The outcome of this component is increased fisheries production through fisheries enhancement and rehabilitation of seabed habitats programs particularly in the offshore-deep areas where no MPAs have been established and no fish shelters have existed. Using the data management system especially spatial data on fishing effort, the project will monitor the pressures of bottom trawling on seabed, and identify the seabed/grounds for installing the artificial fish habitats to increase fish production in the offshore areas. Supporting activities are:

- 3.1. Investigation of the suitable grounds for deployment of the artificial reefs through the assessment of critical seabed habitats using high-resolution spatial data on fishing effort
- 3.2. Provision of platform for knowledge sharing and exchange of the best practices in installing artificial reefs
- 3.3. Increasing the shelters of fishes in the offshore areas via the deployment of artificial reefs based on scientific data, establishment of trawl ban areas, marine protected areas, etc.
- 3.4. Catalyzing the inter-agencies cooperation for the rehabilitation of offshore seabed habitats

Component 4 will foster the national and regional cooperation and coordination in enhancing the healthy ecosystems through the establishment of data management system, development of the bottom trawl best practices and alternative gears as well as creation of the offshore artificial fish habitats where there are no MPAs or shelters for fish to hide. At national level, the project will strengthen cross-sectoral coordination and will harness the national scientific and technical expertise and knowledge necessary to promote the policy, legal and institutional reforms for fisheries refugia management in the participating countries. Regionally, Component 4 will foster regional cooperation in: the integration of scientific knowledge and research outputs with effective fisheries management policies; and in enhancing the healthy ocean through the Best Practices in Trawl Fisheries. This component also includes project coordination and management activities aimed at: ensuring the timely and cost-effective implementation of the regional and national-level activities; and satisfying the reporting requirements of UNEP and the GEF. Supporting activities are:

- 4.1. Strengthening of the cross-sectoral coordination in improving the ecosystem health
- 4.2. Harnessing of the national scientific and technical expertise and knowledge in promoting policy, legal and institutional reforms for enhancing the healthy oceans and implementing the best practices in trawl fisheries
- 4.3. Regional cooperation in the integration of scientific knowledge and research outputs with effective fisheries management policies
- 4.4. Regional cooperation in enhancing the healthy ocean ecosystems through the Best Practices in Trawl Fisheries
- 4.5. Effective coordination of regional and national-level activities and satisfying the reporting requirements of UNEP and GEF

The longer-term goals of this Project are to contribute to: improved seabed ecosystems and protected areas in the South China Sea and Gulf of Thailand; improved national fisheries management policies of the bottom trawling that threatens the demersal fish stocks and critical seabed habitat linkages; and enhanced uptake of best practices in bottom trawl fisheries management and biodiversity conservation in the design and implementation of regional and national fisheries management systems. The medium-term objectives are to: build the resilience of Southeast Asian bottom trawl fisheries to the effects of high and increasing levels of fishing effort on seabed habitats; improve the understanding among stakeholders, including fisherfolk, scientists, policy-makers, and fisheries managers, of the seabed ecosystem and fishery linkages as basis for integrated fisheries and ecosystem/habitat management; and build the capacity of fisheries departments/ministries and all relevant private partnerships to engage in meaningful activities regarding the improvement of fisheries and management of interactions between fisheries and critical seabed habitats. The related end-of-project targets are:

- by 2024, regional data management systems are established for effective fishing management and monitoring of the effects of bottom trawling on seabed habitats
- by 2024, six effective artificial reefs or protected areas or trawl bans are established in the offshore areas of the SCS and Gulf of Thailand
- by 2025, fisheries management policies on the best practices in bottom trawl are developed and implemented
- by 2025, about 20% improved bottom trawlers are adopting the best practices in bottom trawl and reducing their effects on the sea-bed habitats

by 2025, about 25% reduction of carbon footprint from bottom trawling in Southeast Asia is achieved

IV. CONSIDERATION AND ACTION BY THE PSC

- The Committee is requested to take note and consideration the proposed concept note on the “Improving Healthy Ocean Ecosystems through Best Practices in Trawl Fisheries”;
- The committee is welcomed to comment on the paper, and provide direction to the PCU for further action.

ANNEX 20: LME21: BUILDING PARTNERSHIPS AROUND LMES IN SUPPORT OF THE 2030 SUSTAINABLE DEVELOPMENT AGENDA

1) INTRODUCTION

A LME partnership is the arrangement where partners agree to cooperate and collaborate to advance their mutual interests by sharing ownership, as well as the responsibility for managing a Large Marine Ecosystem and engage in defining and solving respective problems, and exploring and exploiting sustainable development opportunities. The partnerships assume a shared vision among partners, and a willingness to work together in a spirit of collaboration and cooperation towards creating conditions for sustainable developments within realms of an LME. All LME initiatives operate within a certain form of formal and/or informal partnership. Their characteristics differ depending on the nature of the problem the LME partnerships are confronted with, level of willingness of partners to work towards solving problems, political and economic conditions, environmental challenges etc.

Stepping up action on the ground and increasing impact at scale requires continuous investment and collaboration in supporting the management of LMEs. This process assists countries move towards sustainable development by unlocking the potential for sustainable socio-economic development including through the development of a Blue Economy, including blue carbon restoration, marine spatial planning and economic valuation of marine resources. The optimal way to get there is through a concerted effort and this requires strategic partnerships between all stakeholders. In short, the LMEs must become everyone's business.

2) OBJECTIVES

In addition to the general objectives of the Annual Consultative Meeting for Large Marine Ecosystem (LME), each Consultative Meeting has a number of specific objectives that are linked to the specific theme the meeting focuses on. The LME21 meeting focused on “**building partnerships towards achieving SDGs in the context of the 2030 Sustainable Development Agenda**”.

More specifically, the LME21 meeting aimed, inter alia, to:

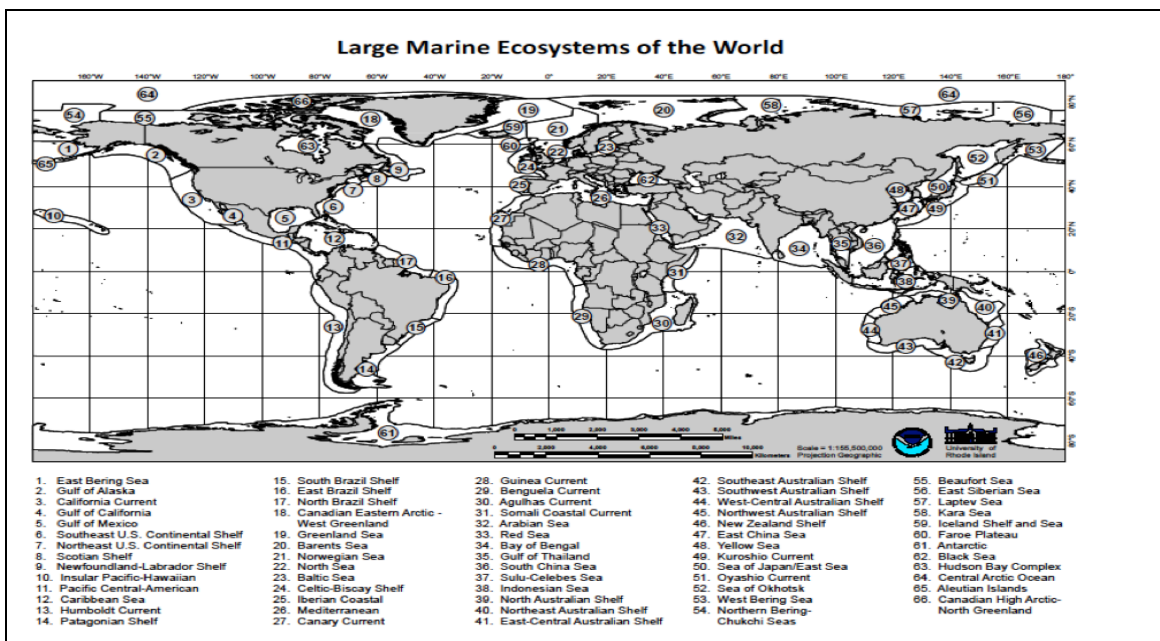
- Mobilize practitioners and partners to enhance the LME community's efforts towards implementation of SAPs as well as implementation of the Agenda 2030 agenda, in particular SDG14 targets;
- Present latest development in solving the critical issues important for the implementation of LME projects and programs, such as coastal resilience, pollution, fisheries, coastal degradation etc;
- Discuss and approve the medium-term program of work (roadmap) of future LME consultative meetings;
- Inform potential partners of the benefits that creating alliances with the LME initiatives may bring;
- Advise on the transformation of the TDA-SAP process from an almost exclusively “problem-solving” mechanism towards a “leveraging-opportunities” investment framework.

3) OUTPUTS OF THE LME21:

- Existing and potential future partners in LME partnerships brought together and informed of the benefits of their cooperation and collaboration and exchanged good practices and lessons learnt for establishing and maintaining partnerships;
- Progress in reaching SDG 14 targets through implementation of SAPs presented;
- Projects' operatives informed of the latest development in scientific subjects relevant to the implementation of the projects and the ways to achieve that;
- Validated medium term roadmap of LME annual consultative meetings;
- Proposals for the revision of the TDA-SAP process;
- Proposed agenda topics, time and place of the 22nd LME Consultative Meeting in 2020; and
- Agreed strategy for the LME Community participation at the forthcoming oceans events.

CONSIDERATION AND ACTION BY THE PSC

- The committee is requested to update the LME21 and how linkage of the SCS and GOT LMEs implemented by relevant countries and funded by GEF through the IW-LEARN program.
- The committee is welcomed to comments for increasing the best practices and building partnerships towards achievement of the SDG14 targets.



ANNEX 21: RESULTS OF THE TWENTY-FOURTH INTERGOVERNMENTAL MEETING OF THE COORDINATING BODY ON THE SEAS OF EAST ASIA (COBSEA)

I. INTRODUCTION

The COORDINATING BODY ON THE SEAS OF EAST ASIA (COBSEA) aimed at protecting this marine and coastal environment for the health and well-being of present and future generations, the Action Plan for the Protection and Development of the Marine Environment and Coastal Areas of the East Asian Seas Region (the East Asian Seas Action Plan) was adopted in April 1981 and revised in 1994. At the request of participating countries, UN Environment established the Regional Coordinating Unit for the East Asian Seas Action Plan in 1993, functioning as a Secretariat for COBSEA. The Secretariat is hosted by Thailand and administered by UN Environment.

COBSEA is one of 18 Regional Seas programmes for the sustainable management and use of the marine and coastal environment. Individual Regional Seas programmes reflect a similar approach, tailored to address regional context and environmental challenges while supporting delivery of global environmental and development goals.

The East Asian Seas Action Plan brings together nine countries - Cambodia, People's Republic of China, Indonesia, Republic of Korea, Malaysia, the Philippines, Thailand, Singapore and Vietnam - in development and protection of the marine environment and coastal areas of the region, for the health and wellbeing of present and future generations. Specifically, efforts are focused on addressing land-based marine pollution; strengthening marine and coastal planning and management; and sharing marine environmental management experiences and policies towards strengthened regional governance.

Taking into consideration the PROJECT on Implementing the Strategic Action Programme (SAP) for the South China Sea where the fisheries component is one of the six components under the SAP for SCS. Other five components of SAP are related to marine habitats and land-based pollution coordinating by COBSEA.

This paper aims to update the project steering committee to the COBSEA activities at the 24th Intergovernmental Meeting of the COBSEA for information.

II. 24th INTERGOVERNMENTAL MEETING OF THE COBSEA

The Twenty-fourth Intergovernmental Meeting of the Coordinating Body on the Seas of East Asia (COBSEA) was held on 19-20 June 2019 at the Inaya Putri Bali Hotel in Bali, Indonesia, back to back with the meeting of the COBSEA Working Group on Marine Litter. The meeting, inter alia, addressed the revision of the COBSEA Regional Action Plan on Marine Litter (RAP MALI), discuss activities carried out in the context of the action plan, and consider the establishment of a Regional Activity Centre, hosted by the Republic of Indonesia.

Participating countries, the COBSEA Secretariat and observers shared updates on progress made to address marine litter in particular, including ongoing initiatives and planned projects. Outcomes of discussions at the Working Group meeting regarding the revision of the RAP MALI and the evolving institutional framework of COBSEA, were presented at the Intergovernmental Meeting and respective

decisions put forward for approval by participating countries. The PCU-Refugia was also invited to share the progress work to the meeting.

III. CONSIDERATION AND ACTION BY THE PSC

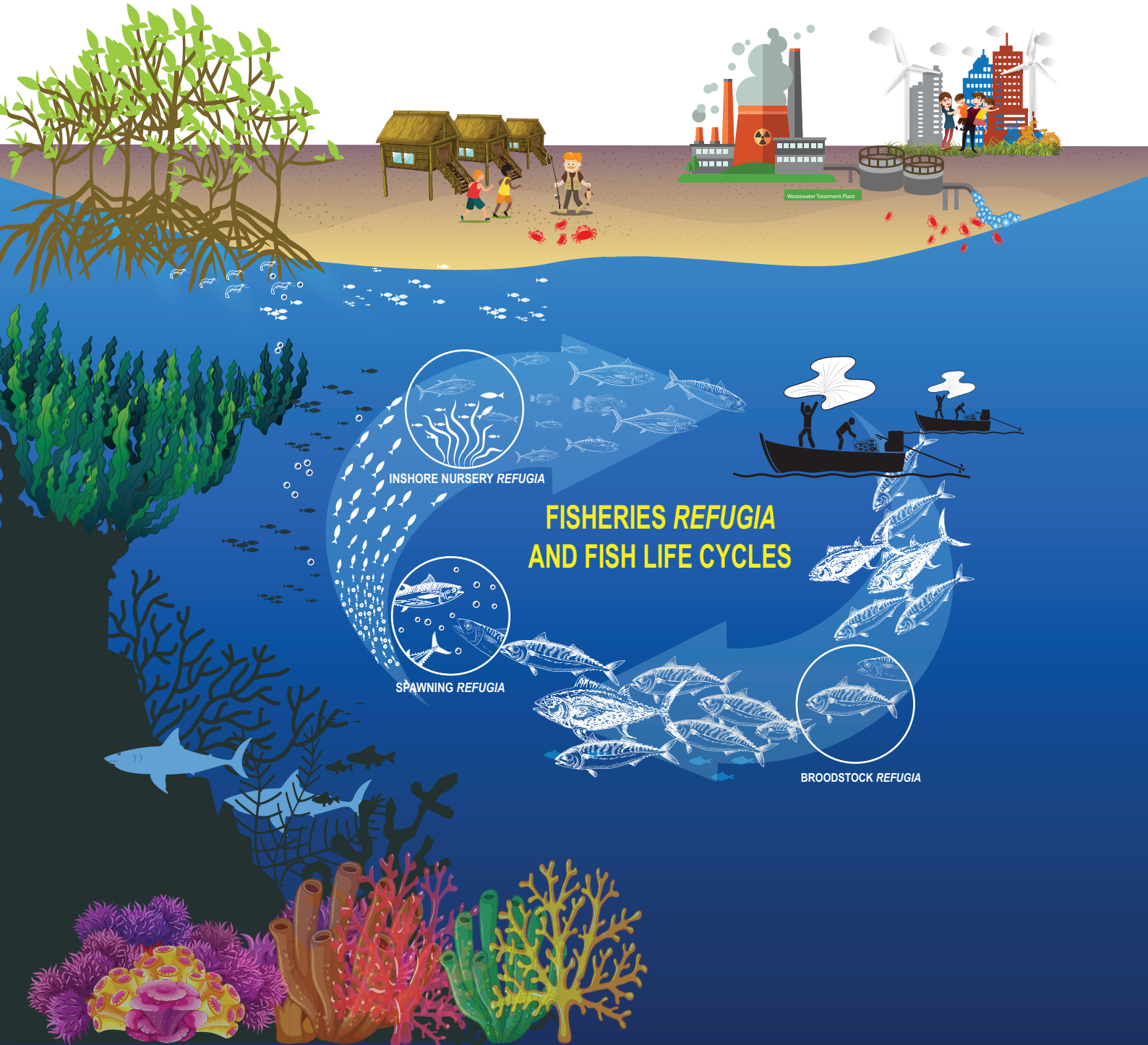
- The Committee is requested to take note the report of the 24th Intergovernmental Meeting of the Coordinating Body on the Seas of East Asia (COBSEA);
- The committee is also invited to provide advice concerned to the COBSEA activities.

ANNEX 22: ASEAN-SEAFDEC FORUM DURING 2019-2020

Period	Meeting Name	Required Action
11-13 NOV.19	The 42 nd Meeting of the SEAFDEC Program Committee (42PCM) CHIANGMAI, THAILAND	Progress the achievements for 2019
14-15 NOV.19	The 22 nd Meeting of the Fisheries Consultative Group of the ASEAN-SEAFDEC Strategic Partnership (22FCG/ASSP) CHIANGMAI, THAILAND	Address the 1 st Draft of the Regional Action Plan for management of Transboundary Species: Short mackerel in the Gulf of Thailand Sub-region for Comment and endorsement,
5-7 FEB 20	The 3 rd Meeting of the Regional Scientific and Technical Committee Meeting (RSTC3): HAI PONG, VN (Tentative)	Progress the works Drafting the Indicators for management of fish-refugia Other matter
MAR-APR 20	The 52 nd Meeting of the SEAFDEC Council (CM52) TOKYO, JAPAN (Tentative)	Address the final draft of the Regional Action Plan for management of Transboundary Species: Short mackerel in the Gulf of Thailand Sub-region for adoption
MAY-JUN 20	The 12 th ASEAN Fisheries Consultative Forum (12AFCF) Will be confirmed	Progress the fisheries refugia achievement for information, consideration and direction
MAY-JUN 20	The ASEAN Sectoral Working Group on Fisheries (ASWGF) Will be confirmed	Address the final draft of the Regional Action Plan for management of Transboundary Species: Short mackerel in the Gulf of Thailand Sub-region for endorsement under the ASEAN Framework, and for support by the Senior Official Meeting (SOM) and AMAF



The Establishment and Operation of A Regional System of Fisheries *Refugia* in the South China Sea and Gulf of Thailand is a part of Strategic Action Programme for the South China Sea



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