



**WEST PACIFIC EAST ASIA
OCEANIC FISHERIES MANAGEMENT
PROJECT**

WPEA OFMP



WORKSHOP ON TUNA FISHERIES MANAGEMENT ON A NATIONAL LEVEL

SUMMARY REPORT

AGENDA I. INTRODUCTION

1. The workshop on tuna fisheries management on a national level, funded by KOICA-Yeosu Project, was held under the WPEA-OFM Project in Puerto Princesa City, Palawan, Philippines during 29-31 October 2012. The purpose of the workshop was to consider how tuna resources and tuna fisheries can be managed on a national and possibly sub-regional level, and to address issues and problems that may arise, specifically in determining management actions such as national catch and effort limits. There were about 27 participants from Indonesia, Philippines and Vietnam and 3 experts were invited to assist the workshop (Attachment 1).
2. Atty. Benjamin Tabios of the Bureau of Fisheries and Aquatic Resources welcomed the participants to the workshop. He acknowledged the need to adopt measures on a local and sub-regional level in ensuring the sustainability of tuna resources and the importance of collaboration between adjacent states. He thanked participants for attending the workshop and thanked the Commission for the assistance in the regional collaboration. Finally, he acknowledged Drs. Soh Lewis, Batongbacal and Armada for the assistance in preparing this important workshop for better tuna fisheries management in the region and looked forward to have a successful conduct of the workshop.
3. Dr. SungKwon Soh, briefly introduced the background of the workshop. He stated the need to come up with approaches to manage tuna resources in the national level, and to build the capacity of the countries on how to manage tuna resources by sharing their understanding in the dynamics of tuna stocks. He also facilitated the introduction of the participants and enumerated agenda items for the meeting.
4. Atty. Jay Batongbacal, the WPEA international law consultant, presented the regulatory interventions on tuna management at the international level and the member countries obligations at the national level (Attachment 2). In his presentation, he discussed the United Nations Convention on the Law of the Sea (UNCLOS), UN Fish Stocks Agreement, WCPFC Convention and WCPFC CMMs and CMM obligations.
5. On the regulatory interventions, he mentioned that most of the regulations are sea-based, but now slowly developing on the land-based operations. He then stated the need to inventory all current laws and regulations on tuna management and ensure that regulations are in place and enacted in accordance with the RFMO requirements. He also provided a summary table of general coastal/fishing State obligations for management of tuna and other migratory fish stocks (Attachment 3).
6. After his presentation, the workshop raised the following issues in relation to the presentation :
 - How to ensure that the management measures in the EEZ are compatible with the RFMOs?
 - Look into a possibility of having States in the South China Sea to fully cooperate with WCPFC, as they are not yet part of the WCPFC Convention Area,
 - Penalties and fines are not specified in the WCPFC CMMs, but are imposed by the flag State as their obligation.
7. Atty. Batongbacal pointed out that obligations of States are clear, but the issue of making the national management measures compatible with the RFMOs management throughout the range of

the stock is a challenge. In order to make it compatible, there is a need for coastal States to make way for flexibility.

8. Incompatibility due to trade requirements was also noted in the case of Indonesia and Vietnam. A meeting/workshop with WCPFC was suggested to review their compliance with the Commission's requirements. The compliance monitoring report to TCC meetings may be utilized in this regard including participation in TCC meetings

AGENDA II. REGIONAL TUNA ASSESSMENT AND MANAGEMENT

9. Mr. Pham Viet Anh shared his learning from the stock assessment workshops hosted by the Secretariat of the Pacific Community (SPC). In his presentation, using the current bigeye stock assessment as an example, he gave background on the model, methodology and data used by WCPFC and how tuna resources are assessed at the regional level. A copy of the presentation appears as Attachment 4.

10. After his presentation, Dr. Soh commended Mr. Anh for providing a good overview on what SPC has been doing for regional stock assessment as science provider to the WCPFC. The group discussed the importance of the tuna tagging data, especially for estimating growth and natural mortality. The group was then referred to the WCPFC Scientific Committee website for more information on details of SPC's stock assessments..

AGENDA III. TUNA MANAGEMENT PLAN OF EACH COUNTRY

11. Representatives from Indonesia, Philippines and Vietnam introduced their national tuna management plans developed or revised under the WPEA OFM Project. Aside from the tuna management framework, each presenter also discussed issues and gaps in the implementation of their management plan in light of WCPFC requirements.

Indonesia

12. Mr. Saut Tampubolon presented Indonesia's National Tuna Management Plan (NTMP) as attached in Attachment 5 and as summarized below. He enumerated Indonesian Fisheries Management Areas (FMAs) and informed the group that catch estimates are done yearly, by species and gear, while catch limit determination has yet to be carried out.

13. He also discussed the processes in coming up with annual catch estimates by gear type and by species based on the best available data (2000-2011); catch composition will be obtained from the port sampling program, and he expected that stocks by species can be estimated through surplus production model. For the catch limit, 80% MSY level, if available will be adopted as a precautionary catch limit. Indonesia would appreciate if this workshop could make any contribution to identify plausible models to estimate MSY and procedures for catch limit determination.

14. Indonesia planned to assess catch limits based on the outputs of the catch estimation workshop. However, until the the catch limit is determined, various fishing effort controls can be introduced such as limitation of fishing area, limitation of fishing gear size, limitation of hooks, limitation of FADs, limitation of fishing vessels, moratorium, and establishment of marine protected areas (20 million ha). The presentation is attached as Annex 3.

Discussion

15. In addition to the need to refine elements in the plan, Indonesia raised the issue of monitoring and control of the significant number of fishing fleets, gears, fishermen and landing points in the country, and observed that it would require significant amount of time in convincing them to adopt the tuna management plan.

16. The Philippine fishing industry representative inquired whether the governments of other countries are providing any subsidy on oil price to their fishing industry. In response, Indonesia shared that they provide subsidies but for small scale fishers only, while Vietnam noted that it subsidized small scale fishers in 2008 when there was an economic crisis in the industry.

Philippines

17. The Philippine Tuna Management Plan was presented by Elaine Garvilles (Attachment 6). She detailed the main objective, specific objectives, principles and scope of application. The management measures and policy directions of the Philippines to ensure sustainable use of tuna resources are divided into i) management measures for tuna fisheries in 'Philippine waters', ii) effective control over Philippine flagged vessels fishing outside national jurisdiction and iii) trade of tuna products originating from the Philippines.

18. The presentation detailed the measures and policy directions for tuna fisheries in 'Philippine waters' which include i) Determination of catch limit based on best scientific evidence available; ii) Control of fishing effort and capacity through registration and licensing of fishing vessels, regulation on fishing gears, payao or fish aggregating device (FAD) management, regulation by fishing area and/or fishing season, protection of juvenile fish and management of associated species (bycatch); iii) Integrated monitoring, control and surveillance which include logbook system, regulation on transshipment at sea, national fisheries observer program, vessel monitoring system (VMS); iv) Port state measures and v) Regulate fishing in navigational areas and around data buoys.

19. Philippine challenges in implementing this plan include: i) increasing pressure to comply with obligations under international fisheries laws and measures adopted by regional fisheries management organizations, ii) pressure to apply compatible measures in areas under national jurisdiction, iii) keeping in step with recent and continuous developments, iv) increasing trade restrictions or regulations that impact on trade, v) raising the awareness of all sectors of the tuna industry, vi) increased cooperation with fishing industry and local governments, vii) ensuring that national laws and regulations are supported or enabled by adequate local regulations and viii) monitoring the level of implementation of the tuna management plan.

Discussion

20. In response to a questions on how the country is limiting its fishing effort, Philippines informed the meeting that since 2005, they did not increase the number of fishing vessels for tuna (moratorium) and that a Fisheries Administrative Order (FAO) has been enacted in 2009, which mandated certain changes in the fishing gear (mesh size, net depth for purse seiners). In addition, an FAO on the limitation of the numbers of FADs per catcher boat was also imposed.

21. On an inquiry about port state measures, it was noted that the catch documentation scheme in the Philippines requiring vessels to submit logsheets upon unloading in port, that will be verified by the fisheries inspectors, and requiring them to secure catch certificate, is in place. It was also noted that there is no law that applies a catch limit in the Philippines, though the country is adopting measures to reduce vessel numbers and effort compatible with WCPFC CMMs.

Vietnam

22. Mr. Vu Duyen Hai presented the national tuna management plan (NTMP) of Vietnam (Attachment 7). The main issues for managing tuna resources and tuna fisheries in Vietnamese EEZ have been illustrated. He also presented main principles for making the NTMP that should be compatible with the international agreements and domestic regulations, and provided the goal and main objective of the plan. The scope of the plan was also defined clearly.

23. Based on the current background, there are four main groups of conservation and management measures: 1) enhancing the legal regulations and institutional frameworks for managing tuna fisheries in Vietnam, 2) establishing and facilitating the mechanism of the data collection and analysis system for tuna fisheries in Vietnam, 3) a combined set of the technical measures, the catch limitation and the fishing effort control was provided in the plan and their implementation schedules were also determined to manage tuna fisheries and conserve the tuna resources, and 4) the trading and marketing measures were also determined to manage tuna and tuna products originating from Vietnam. The presentation also illustrated some major challenges to approve and implement the NTMP in the Vietnamese context.

Discussion

24. The meeting was also informed that Vietnam is just on its first steps to develop a tuna management plan.

Vietnam acknowledged the support of WCPFC through the WPEA project, particularly the assistance in developing the plan. They also expressed optimism on the future implementation of the plan, with an endorsement by the Minister of Agriculture and Rural Development.

25. The need to cross check provincial and national data for stock assessment was also raised, and it is necessary to enhance the quality of existing data to eventually support a scientific-based tuna management plan.

AGENDA IV. NATIONAL LEVEL TUNA MANAGEMENT PLAN?

26. The discussion on the in-country-issues on the tuna management plan was started off with a presentation from Dr. Tony Lewis, WPEA consultant, on national tuna management plans in Pacific islands (PI), and the lessons learned with the formulation and implementation of plans (Attachment 8). Preparation of these plans started in 1998 and there are now 15 of these in various states of sophistication and adoption.

27. He presented features of a generic Pacific Island national tuna management plan which include components of the tuna fishery, management issues, mechanisms to ensure adherence/compliance to the plan, external assistance and industry involvement. He also raised the common issues such as non-adoption of the plan, structural weakness and failure to implement the plan.

He emphasized that in order for the plan to be effective, there is a need to establish clear objectives and mechanisms to ensure adherence to the plan. He also recommended separating development and management aspects in the plan, resist prescription from external providers, and initially include just a simple ecosystem approach to fisheries management (EAFM) component. The need to secure adequate financial resources was also raised as an important factor in ensuring that the plan is moved forward and implemented.

28. Dr. Lewis also presented some guidance on setting catch limits/sustainable harvest targets in National Tuna Management Plans (Attachment 9). He introduced the Maximum Sustainable Yield (MSY), issues with application of MSY along with its widely accepted use as a management goal, but pointed out its acknowledged weaknesses, with examples, and outlined some modern management approaches that are more structured and provide precautionary alternatives to MSY that are nonetheless consistent with legal requirements of the Convention. And other international legal instruments.

29. He also discussed, as a separate issue, prospects for a sub-regional approach invoking the success of the PNA (Parties to the Nauru Agreement) as an example. He then provided some thoughts on the possibility and advantages of a sub-regional approach to tuna management involving Philippines, Indonesia and Vietnam in the future.

Discussion:

30. After the presentation, it was agreed that though a sub-regional approach is workable in employing management measures like that of PNA, a lot of work is needed in achieving it considering that there is limited or no background at all of the WPEA participating countries in the required information and scientific capacity to come up with MSY or alternative approaches .

A. Consideration on the potential technical approaches to manage highly migratory fish stocks on a national level

31. Dr. Nygiel Armada provided a presentation on the potential EAFM technical approaches to manage highly migratory fish stocks on a national level (Attachment 10). The presentation started with the fisheries management approach in the Philippines, the current approach and how it evolved, particularly the process of adopting to the current governance system under the local government code.

32. He also presented the challenges to resource management when local governments control the municipal waters while Bureau of Fisheries and Aquatic Resources (BFAR) controls the national waters. The necessity to have a convergence between the stock distribution and management scales was explained through examples.

33. The key message is the use of effort (input) control as the most practical fisheries control applicable in the Philippines, particularly for stocks shared by various local governments as well as BFAR. Effort control was also useful in allocating fishing efforts among players including commercial fisheries through the use of ecosystem modeling.

34. Finally, the presentation also showed how ecosystem models could provide a basis for effort control, particularly where size groups of important fish stocks like the migratory pelagic species are often spatially segregated. This is very relevant in the Philippines because there are practically different sectors targeting different size groups with the larger-sized groups caught primarily by commercial fishing boats while the small-sized groups largely caught by the municipal or small-scale fishermen.

Discussion

35. After the presentation, the following issues were raised:

- EAFM may not be easily employed in developing countries due to its high data input requirement;

- Practical application of EAFM may involve segregation of the size groups, to see who is catching the larger and smaller ones and to employ policy measures on the matter;
- There may be a difficulty in applying the EAFM approach in oceanic species/tuna management plan due to lack of background of the countries on the matter, as well as limited exposure and capacities, as well the open nature of their ecosystems;
- At the national level, it is better to look into input controls, but on the regional level, top down (output) control may be more acceptable;
- Consider how to incorporate fishing effort limits in the management plan; and
- It is not necessary to come up with specific activity in the soonest time, but at least improve the countries' capacity on how to develop and understand catch/effort limits.

B. Requirements for National-Level Tuna Management

In-Country Strategies towards setting effort limit

36. As a general issue, it was agreed that at the national level, management objectives based on effort limits was probably the best approach. As a next step, the group was therefore tasked to discuss among their country representatives the key steps on how to proceed and setting effort limits in their tuna management plan. Results of the discussions were then reported to the plenary.

Philippines

37. For the Philippines, Atty. Tabios presented Philippine initiatives towards limiting catch in their tuna management plan (Attachment 11). He informed the meeting that Philippines is straightforward in setting effort limit and that Philippines has recognized the MSY-based fishery indicators by the WCPFC and is also implementing precautionary approach to ensure that management measures are compatible with the CMMs. He shared that the objective in setting the limit is to ensure that fishing effort does not exceed the level that produces sustainable catch.

38. He added that in controlling the fishing effort and capacity of the country, Philippines has issued a moratorium on the issuance of commercial fishing vessel licenses since 2003, and that policies and technical measures have been adopted to prevent the increase in fishing mortality of tuna. He concluded that certain issues needs to be put in place, reviewed and updated.

39. The following discussions were raised after the presentation:

- The formulation of the Philippine tuna management plan has been a long process and has been revised and updated since its initial formulation in 2004;
- A no-take zone system is in place in the country to make way towards achieving MSY;
- To control catch limit, it was informed that input method is enforced as a precautionary approach, and that Philippines has not yet reached the point where catch exceeded the sustainable limits, and that sanctions and penalties were identified in view of violations;
- There is a need to set concrete timelines in the objectives of the management plan; and
- Evaluation and monitoring of tuna stocks is done regularly through the fisheries statistics data gathering, and that catches were observed to be declining in the recent years due to in-country initiatives in reducing fishing effort.

Indonesia

40. For Indonesia, Mr. Tampubolon discussed measures to control fishing effort of their country such as limitation of fishing area, fishing gear size, and hooks. Limitation of FADs per boat, deployment areas and distance are also employed. In addition, limitation of fishing vessels,

moratorium and establishment of marine protected area (MPA) within their archipelagic waters were also mentioned.

41. The following matters were discussed after the presentation:
- As a catch limit has not yet been identified, Indonesia shall proceed with the control mechanism and approaches that they have identified;
 - There is a challenge in imposing conservation management measures while ensuring the livelihood of the small scale fisherman;
 - There is a need to come up with a roadmap on how to achieve the plan;
 - There is a need to revisit the timeframe for moratorium, limitation on hooks and imposing a close season in tuna fishing; and
 - Many activities have been implemented in Indonesia in line with the WCPFC conservation measures, though these are still reported only in Bahasa and not generally available.
42. For Vietnam, Mr. Pham Viet Anh presented the approach to the setting of fishing effort using the Schaefer model. He detailed the data needed to come up with the MSY, as well as recognizing the shortcomings in using the model. After the presentation, the following comments were made:
- The model will serve as a good starting point for getting the catch limit and that available data in the past surveys done may be used; current available data are however inadequate to determine MSY with any certainty;
 - Standardized effort data must be used as a measure of efficiency in the purse seine fishery and it is different to that of longline fishery; and
 - Relevant member countries in the sub-region may conduct a collaborative study to come-up with a sub-regional level MSY, as basis for management of the shared tuna stocks.

Key Lessons Learned

43. Drawing on the presentation on PI NTMPs made by Dr. Tony Lewis, Atty. Tabios facilitated the discussion, revisiting lessons from the Pacific Islands on things to consider in coming up with and implementing a national tuna management plan.
44. Aside from the lessons learned as enumerated, the group highlighted the following points:
- Look into the life cycle of the species in coming up with the plan in order to consider the spawning area of the fishes, although these are rarely limited in tropical tunas;
 - Objectives and the action plan must be coherent and have to be linked with the general management plan of the nation and the fishery sector
 - Industry participation and government structure must be clearly defined and the private sector must be consulted regularly on the plan formulation and implementation;
 - Acceptance of the plan by the stakeholders will be faster if they know that they are already/partially involved in the plan and have some ownership of the plan
 - Management plans need to be regularly reviewed and revised as the fishery and regulatory environment changes, so as to avoid decay
 - Management is a way to achieve development, and that the development aspect can be part of the management plan.

Approaches to Calculate Catch Limits

45. Dr. Lewis reiterated the approaches that are aligned with MSY in coming up with, for example, a WCPFC provisional limit reference point (Attachment 14). He gave examples of how

PNA was able to estimate TAC and then TAE, based on biomass distribution and historical fishing effort . He also discussed the elements in the calculation which includes: 1) proportion of each model region covered by PNA EEZs; 2) MSY for each region of which the PNA EEZ is calculated; and 3) TAE that will produce the TAC is calculated given the PNA catch rate.

46. The group then discussed and further clarified how the PNA vessel day is derived, and that countries may take from the available data they have to come up with an MSY and then TAE.

47. The preliminary results of the recent study by Keith Bigelow entitled Relative Abundance of Tuna Stocks in the Sulawesi Sea (Region 12) and Estimating MSY was then presented by Atty. Benjamin Tabios, as an example of an approach at national or ecosystem level.

48. In his presentation he detailed the Philippine tuna catch history for the three sectors namely: handline, purse seine and ring net. He also discussed the statistical analysis of the three sectors to estimate the relative abundance (standardized CPUE) and to estimate the Maximum Sustainable Yield for the Sulawesi Sea (Region 12).

49. After the presentation, Vietnam suggested to come-up with a manual or guideline/s that states the criteria on what model is applicable for countries, and will raised the possibility of having the said initiative funded in the next phase of the WPEA project.

Basic EAFM

50. To give further consideration to the EAFM approach, Dr. Nygiel Armada presented the basic concepts, principles and relevant information needed for the Ecosystem Approach to Fisheries Management (Attachment 16). He outlined the advantages of EAFM particularly in addressing the ecosystem issues as well as those of human and ecological well-being.

51. He also emphasized the need to develop a governance system at the local level and to make partners realize that EAFM is not a new approach. He also compared EAFM to ICM, such that the latter deals with sectors to develop coastal areas, while EAFM focus on certain sector (fisheries), while others are considered peripheral.

52. After presentation, the following issues were raised:

- Approaches used varied on a case by case basis, but had to start at the local level;
- Adoption of EAFM by the Commission (and elsewhere) is on a voluntary basis, although conservation and measures for fisheries management generally increasingly call for an holistic EAFM approach; and
- With the migratory nature of tuna, Vietnam raised the difficulty in determining the boundary of the ecosystem, and this may be incorporated in the next phase of the project.

AGENDA V. REQUIREMENTS FOR NATIONAL LEVEL TUNA MANAGEMENT

53. As discussed, the following activities were identified to be funded under the Phase 2 of the WPEA OFM Project:

- Creation of regional database in the three countries;
- Development/ refinement of the National Tuna Management Plan; and

- Investigation of the EAFM approach to tuna management and collecting data as required

C. Closing Remarks

54. In closing the workshop, WPEA Project Manager, thanked the countries for their inputs and contribution, and for actively participating in the discussion during the workshop.

55. Nygiel Armada thanked the organizers for the opportunity to be part of this workshop, and sharing his views and knowledge on Ecosystem Approach to Fisheries Management (EAFM).

56. Tony Lewis noted that he was well pleased with the positive outcomes of the workshop, as he initially had some doubts that much could be achieved. He noted that Philippines was very well advanced in the process of formulating and implementing its NTMP, and provides a good example of what can be achieved, whilst Indonesia and Vietnam had made great strides in thinking about the content and practicalities of developing and applying an NTMP in quite complex situations and with less information than would ideally be needed to support a science-based plan. He also noted that the workshop has identified some key areas for further work at national and sub-regional level in tuna resource management, especially the agreement that input measures at national and sub-regional level may be the most appropriate measure to frame management objectives.

57. Indonesia thanked the WCPFC and the WPEA project for the conducting the workshop, and appreciated the learnings they had from the experts and the member countries. They also thanked the Philippine government for the arrangements and hospitality. Indonesia looked forward to develop the National Tuna Management Plan.

58. Vietnam thanked WCPFC and the organizers of the workshop for the kindness accorded to them and acknowledged the experts who provided them the guidance and better understanding on how to develop their management plan. Lastly, they look forward to continue working towards the development of their tuna management plan until the next phase of the project.

59. Philippines expressed their gratitude to WCPFC, especially Dr. Soh, for the assistance in the tuna fisheries of the country, through the implementation of the WPEA project. The useful participation and contribution of the other participants (Indonesia, Vietnam) were also acknowledged.

Attachment 1. List of participants

Name	Position	Agency/Office
1. Dr. Sungkwon Soh	WPEA Project Manager	WCPFC
2. Atty. Jay Batongbacal	WPEA Project Consultant	University Of the Philippines
3. Prof. Nygiel Armada	WPEA Project Consultant	USAID
4. Dr. Antony Lewis	WPEA Project Consultant	
Vietnam		
5. Mr. Pham Trong Yen	Deputy Director General	Science & Technology and International Cooperation Department
6. Mr. Le Tran Nguyen Hung	Head of Division	DECAFIREP
7. Mr. Vu Duyen Hai	Head of Division	MARD
8. Mr. Pham Viet Anh	National Tuna Coordinator	DECAFIREP
9. Mr. Nguyen Quoc Anh	Director of VMS Center	DECAFIREP
Indonesia		
10. Mrs. Erni Widjajanti	Deputy Director	DGCF
11. Mrs. Putuh Suadela	Staff	DGCF
12. Mr. Saut Tampubolon	Assistant Deputy Director	DGCF
13. Mr. Agustinus Anung Widodo	Research Scientist	RCFMC
Philippines		
14. Atty. Benjamin Tabios	Asst. Director for Admin. Services	BFAR
15. Mr. Melchor Tayamen	Interim Exec. Director	NFRDI
16. Mr. Samuel Resma	Manager, Dept. of Business Affairs	RD Fishing Corp.
17. Mr. Angel Buan	Executive Secretary	Alliance of Philippine Fishing Federations, Inc. (APFFI)
18. Ms. Rosanna Bernadette Contreras	Exec. Director	Socskargen Federation of Fishing and Allied Industries, Inc. (SFFAI)
19. Dr. Alma Dickson	Chief, NMFDC	BFAR
20. Mr. Rafael Ramiscal	Chief, Scientist M/V DA-BFAR	BFAR
21. Mr. Peter Eric Cadapan	Regulatory Officer	BFAR
22. Ms. Sarah Bales		DA-NAFC
23. Ms. Virginia Vilorio	Chief, Fisheries Statistics Division	BAS
24. Ms. Estella De Ocampo	Chief, Municipal Fisheries Statistics Section	BAS
25. Mrs. Cynthia Vallesteros	Chief, Commercial Fisheries Statistics Section	BAS
26. Engr. Miguel Lamberte	Operations Manager	PFDA
27. RD Ambutong Pautong	Regional Director	BFAR 12
28. Ms. Eunice Gasmin	Research & Admin. Assistant	NFRDI
29. Ms. Suzette Barcoma	Aquaculturist I	NFRDI
30. Mr. Desiderio Ayanan, Jr.	Research Assistant	NFRDI
31. Ms. Elaine Garvilles	Aquaculturist I/Asst. National Tuna Coordinator	NFRDI

List of Attachments

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3. Table of General Coastal/Fishing State Obligations for Management of Tuna and Other HMFS
4. Stock Assessment in WCPFC
5. National Tuna Management Plan – Indonesia
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8. National tuna management plans in Pacific Islands Lessons learned in plan formulation and implementation
9. Guidance on setting catch limits/sustainable harvest targets in National Tuna Management Plans
10. Potential approaches in managing highly migratory fish stocks on a national level
11. Country initiatives on Limiting Fishing Effort – Philippines
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14. PNA longline VDS – Bigeye MSY and its utility for conservation limits
15. Relative abundance of tuna stocks in the Sulawesi Sea (Region 12) and estimating MSY
16. Basic EAFM