



## REPORT

### THE NATIONAL TRAINING ON IMPROVEMENT OF DATA COLLECTION FOR TUNA GILLNET AND PURSE SEINE FISHERIES IN VIETNAM

27-29 February 2012, Binh Dinh, Vietnam

August 2012  
TD/RP/159



## Southeast Asian Fisheries Development Center (SEAFDEC)

### About SEAFDEC

The Southeast Asian Fisheries Development Center (SEAFDEC) is an intergovernmental organization established in December 1967 for the purpose of promoting sustainable fisheries development in the region through research, training and information services.

### Membership

Its current Member Countries are Brunei Darussalam, Cambodia, Indonesia, Japan, Lao PDR, Malaysia, Myanmar, the Philippines, Singapore, Thailand and Vietnam.

### SEAFDEC Mandate

SEAFDEC was mandated to “ *develop and manage the fisheries potential of the region by rational utilization of the resources for providing food security and safety to the people and alleviating poverty through transfer of new technologies, research and information dissemination activities*”.

In achieving the objectives and mandate of the Center, four technical Departments were established to undertake various technical disciplines of fisheries namely the Training Department (TD), the Marine Fisheries Research Department (MFRD), the Aquaculture Department (AQD), and the Marine Fishery Resources Development and Management Department (MFRDMD).

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## I. EXECUTIVE SUMMARY

1. The tuna statistics in Vietnam has been assisted by the Western and Central Pacific Fisheries Commission (WCPFC) in data collection from longliners, leaving the data from gillnetters and purse seiners out. In order to fill this gap, the SEAFDEC Training Department (TD) agreed to assist in training of national enumerators and provincial fisheries supervisors the port sampling techniques. The training was conducted 27-29 February 2012 in Binh Dinh province with the financial support of the Japanese Trust Fund.
2. No drastic change was introduced by the training to the data collection and processing for tuna gillnetter and purse seiners; the current format and method of data processing as implemented in the WCPFC project for tuna longliners were used as reference and template (forms, protocol, and mechanisms of data collection and analysis, reporting and dissemination, etc.). After an overview on tuna fisheries at global, regional, and national levels was elaborated, the necessity and ways forward for data collection from tuna gillnetters and purse seiners were discussed in detail at the training.
3. It was agreed in general that the ongoing data collection protocol should be used for tuna fisheries at the ports in Dinh Binh, Khanh Hoa, and Phu Yen provinces. This agreement was the major output of the training; and it was recommended that the Research Institute for Marine Fisheries (RIMF) of Vietnam should consider harmonizing the data recording format for tuna gillnetters and purse seiners with that of WCPFC.

## II. PROCEEDING OF THE TRAINING

### a) Opening of the Training

4. Since 2008, SEAFDEC/TD has implemented a regional program on “information collection on highly migratory species in Southeast Asian Waters” to review and evaluate the status of tuna fisheries and the production in the Southeast Asian waters. The program also intends to facilitate development of the regional tuna database based on the data collected at major landing ports. Throughout the activities related to tuna catch data collection in Vietnam implemented in the past few years, it was found that the stage of development in tuna fisheries of the countries in the region varies from country to country. For Vietnam, the national system and mechanism to implement routine data collection on tuna capture fisheries still need considerable attention.
5. Participants to the training were local enumerators and supervisors for tuna information collection from purse seine and gillnet of major tuna landing provinces - including Binh Dinh, Phu Yen, Khanh Hoa, Ninh Thuan, Binh Thuan, Ba Ria Vung Tau, Ca Mau and Kien Giang provinces. Resource persons were drawn from SEAFDEC/TD and relevant agencies of Ministry of Agriculture and Rural Development (MARD, D-FISH, DECAFIREP, and RIMF). List of the resource persons and participants appears as [Annex 1](#).
6. Head of Capture Fishery Technology of SEAFDEC TD, Dr. Worawit Wanchana, welcomed the resources persons and participants to the training, and informed them of the agenda and other arrangements of the training ([Annex 2](#)). He referred to the main objective of the training, which is to assist SEAFDEC Member Countries in strengthening their human resources capacity in the areas where the tuna Regional Fisheries Management Organization (RFMO)’s activity does not cover. Since about half of the world tuna production comes from Southeast Asia, their sustainable development and management of tuna fisheries should be based on reliable information on tuna stock

status. Timely reliable information is essential for the formulation of a novel policy. He encouraged active participation of the participants in the training in order to achieve the prescribed goal and objectives.

7. In the opening session, Mr. Pham Trong Yen, Deputy Director of Science & Technology and International Cooperation, Department of Directorate of Fisheries, reiterated the important contribution of the fisheries sector in terms of value and volume of both aquaculture and captured products in Vietnam. Amongst the top-three fisheries products (shrimp, pangasius, and tuna) some 80,000 tonnes of tuna, both from imported raw materials and domestic catches, were processed as export worth USD 300 million in 2011. As a full RFMO member, provision of scientific data based on their prescribed standard and format need to be collected routinely. At the same time, all regulations and measures of the RFMO should also be observed. He also added that Vietnamese government has prepared to sign the “highly migratory species” agreement with the Western and Central Pacific Fisheries Commission (WCPFC).

8. He also informed the participants that three major tuna landing provinces (Binh Dinh, Khanh Hoa, and Phu Yen) are currently active in the WCPFC’s pilot program on tuna data collection; the project activity will be completed by the year 2012. It is envisaged that the routine information collection on tuna landing in these three provinces will be established and implemented as a national program from 2013 onward. Reliable scientific information with accurate data is important for the development of national tuna fisheries policy and measures.

#### b) Organization of the Training Workshop

9. The Training was organized during 27 to 29 February 2012 in Binh Dinh Province of Vietnam.

10. The agenda of the training is as follows:

- Opening and introduction
- Overview of tuna fisheries and improvement of tuna fisheries data collection in the Southeast Asian Region and Vietnam
- Tuna information collection activities for longline, gillnet, and purse seine fisheries in Vietnam implementing under national program of activities and the project of WCPFC
- Plan for longline, gillnet, and purse seine fisheries in Vietnam
- Practical session on species identification and data collection at the fishing ports
- Conclusion and recommendations
- Closing

#### c) The objectives of the Training and key outputs

11. The objectives of the training are to:

- Train local supervisors and enumerators for data collection on gillnet and purse seine fisheries
- Familiarize the local supervisors and enumerators with protocols, data collection forms, and fish measurement method by using the training materials developed by the WPEA OFM Project, to be applied for data collection on gillnet and purse seine fisheries

- Facilitate the establishment of data collection system in the three WCPFC project provinces, which will include the mobilization of local supervisors and enumerators, budget, facilities, and contractual agreements, etc.

12. Key outputs of the Training include:

- Building capacity of the participants/enumerator to implement correctly the procedures of port sampling and data collection for the catch of tuna longline fishing and to be able to apply for tuna gillnet and purse seine fishing;
- Facilitate the process for establishment of
  - National data collecting system for gillnetters and purse seiners
  - Signing of the national tuna fisheries data collection contract
- Full list/information of provincial/local enumerator responsible for port sampling for the purpose of the WCPFC tuna project coordinator.

d) Training session

Overview tuna fisheries in Southeast Asian Region (Annex 3.1)

13. Dr. Worawit Wanchana of SEAFDEC presented an overview of tuna fisheries in Southeast Asian region. He outlined the overall tuna catch in the Southeast Asian waters, current status of regional initiative to develop the regional tuna database and the support of SEAFDEC for improving of tuna information collection in Southeast Asia, and updated information on other tuna regional fisheries management organizations in the region. He also informed that inadequate data have made it difficult to assess the neritic tuna stocks in most of the countries in the region; better coordination among relevant national agencies could contribute to a great improvement of tuna information collection. Based on discussion made at the Special Meeting on Tuna organized by SEAFDEC in late 2011, one of the recommended immediate follow-up actions at the national level was the need for strengthening of human resource capacity on (i) tuna species identification (particular for the frozen samples of juvenile stage of yellowfin and bigeye); and (ii) stock assessment for tuna.

Overview of tuna fisheries in Vietnam (Annex 3.2)

14. Describing tuna fisheries in Vietnam, Mr. Pham Viet Anh informed the participants that there are 14 species of tuna resources in the Vietnamese waters, according to a recent RIMF finding. Yellowfin, bigeye, and skipjack tunas are known to be captured in the EEZ of Vietnam. The main fishing gears used for catching these tunas in are longline, gillnet, and purse seine.

15. In Vietnam, no national data on tuna fisheries exist; only tuna longline fishery data have recently been collected by a WCPFC pilot project in three (3) central provinces. No catch data are available for gillnet and purse seine fisheries despite their active involvement in tuna fishing. The lack of such data has made it impossible to assess the status of tuna fisheries in Vietnam. To make the matter worse, the monitoring of tuna catch has been made difficult owing to the complex nature of the multi-gear fishery, the innumerable number of tuna landing sites, and the importance of the diverse and widely distributed small-scale fishers especially in the central part of Vietnam.

16. Over the years, tuna fisheries in Vietnam have attracted the interest of Western and Central Pacific Fisheries Commission (WCPFC) owing to a relatively high volume of the annual tuna catch. The importance of the Vietnamese tuna fisheries to the WCPFC and the involvement of Vietnam in the WCPFC process has been acknowledged with their inclusion in the a new project offered by the Global Environment Facility (GEF) - West Pacific East



Asia Oceanic Fisheries Management (WPEA OFM) Project, which began in 2010. The WCPFC project activities are meant to strengthen the national capacities and international cooperation on priority transboundary concerns relating to the conservation and management of highly migratory fish stocks in the west Pacific Ocean and east Asia (Indonesia, Philippines and Vietnam).

17. With the financial support from WPEA OFM project, the sampling surveys of unloading tuna catch at designated landing sites, logsheet and data from observer program have been collected in the three central provinces since September 2010. These sampling surveys are limited to tuna longline fishers, leaving the gillnetters and purse seiners out under no national data collection system. It is noteworthy that the considerable volumes of skipjack tuna catch, mainly by purse seine and gillnet, have contributed significantly to the total catch of WCPO.

18. The omission of data on the tuna landings from purse seine and longline fishers has obviously contributed to incorrect regional tuna stock assessment by the RFMO, and its consequential impacts on management measures and the well-being of the fish stocks. A national mechanism and system for collecting the catch data from gillnet and purse seine fisheries are urgently needed reliable tuna stock assessment at the national and regional levels. Species identification, especially of frozen juvenile of bigeye and yellowfin tuna, can also help improve the quality of tuna stock assessment.

19. As a member of SEAFDEC, Vietnam has its obligation to and responsibilities for the regional cooperation in providing reliable scientific data for regional stock assessment and management purposes. Currently, the data and scientific information provided by Vietnam to SEAFDEC can be further improved, particularly through human resource enhancement and financial provision.

20. Mr. Pham Viet Anh also presented to the participants the results of the research survey that the Ministry of Fisheries carried out to assess the distribution of the tuna in Vietnam waters in three sub-areas during 2002-2005.

Ongoing activities of SEAFDEC on improvement of information collection on tuna in the region ([Annex 3.3](#))

21. Ms. Penchan Laongmanee of SEAFDEC presented to the participants the results of two SEAFDEC projects on “Highly Migratory Species Information Collection,” and “Toward Better Utilization and Harmonized Information for Fisheries Management in Southeast Asia.” In the first project, SEAFDEC aimed to provide technical support to improve tuna information collection in Indonesia, Philippines, Thailand and Vietnam, and to facilitate development of the regional tuna database in Southeast Asia. The second SEAFDEC project aims to improve fisheries statistic data framework of Southeast Asian countries. The outputs from activities under these two projects are now made available through <http://fishstat.seafdec.org/tuna> and <http://fishstat.seafdec.org> respectively.

Overview of data collection activities for longline, gillnet and purse seine in Vietnam under WPEA Project ([Annex 3.4](#))

22. Mr. Pham Viet Anh gave the presentation on the current status of tuna data collection in Vietnam, based on the work on the ongoing national project in Binh Dinh, Khanh Hoa, and Phu Yen provinces. Funded by WCPFC under its WPEA Project, four staff (a supervisor and three enumerators) is being supported in each province to carry out port

sampling, unloading data, logbook system, and onboard observer program. At this stage, only tuna longline fishery has been covered; the collection of data from gillnets and purse seine fisheries have been pondered since 2011.

23. The data collected from this project will be a data source for the Tuna Fisheries Database Management System (TUFMAN<sup>1</sup>) and for WCPPFC/SPC2 for regional tuna stock assessment. The regular schedule for data submission to WCPPFC/SPC is 30 April. Annual audit of data is also required for:

- Logsheet and observer data;
- Position of fishing ground/area;
- Species composition of the catch, based on the specific requirement of each fishing gear

24. Mr. Anh also mentioned certain common problems currently faced by the project, such as:

Problems in sampling

- Shortage of standard equipment for data sampling, e.g., measurement tape, weighing scale, etc.
- Difficulties in juvenile identification from samples of yellowfin and bigeye tunas, especially from frozen specimens; and
- Too small the samples that could be drawn from longline fishery.

Problems with the compliance

- Insufficient or unclear information on the catch composition, especially from longline fisheries that often furnished only data for tuna, and no other bycatch species.

25. Mr. Anh suggested that, based on the lessons learned from the implementation of this project, stronger cooperation with tuna associations in the three provinces should be nurtured to encourage their more active involvement in the tuna data collection. Before the due termination of the project at the end of 2012, a key stakeholders consultation has been planned to discuss a long-term tuna data collection, and to report the outputs of the project.

**Recent WCPFC fisheries trends and data provision obligations of member countries to WCPFC (Annex 3.5)**

26. On the current status and trends of tuna capture fisheries in the Western and Central Pacific Fisheries Commission Area (WCP-CA), Mr. Anh informed the participants that only purse seine fishery showed an increasing trend of the tuna catch, while those of longline and pole-and-line fishing were at par. According to the available catch statistics, the bigeye and yellowfin tuna stocks in the WCP-CA area went down by about 30% since 2008 but remained above the lowest level in 2006. He observed that although the overall annual catch of tuna was reported as increased in 2010, this could attribute to a larger percentage of juvenile tuna in the catch. Overall, the WCP-CA tuna stocks have shrunk gradually to the level of 50% depletion from the exploited level. The increasing trend of bigeye tuna catch might be a result of the increasing deployment of Fish Aggregating Device (FAD) by tuna purse seiners. Mr. Anh also informed the participants of the

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<sup>1</sup> TUFMAN is a database tool developed for Pacific Island Countries to manage their tuna fishery data. It provides for data entry, data management, data quality control, administration, and reporting. The system is the same throughout the region but is highly customizable and setup specifically for the needs of each of the individual countries. It has been developed over many years and has evolved from a simple system to one that is becoming a comprehensive tuna data management tool.

procedures of submitting annual report to the WCPFC through the annual meetings of the Scientific Committee and of the Technical and Compliance Committee.

#### Review of tuna fisheries data collection system at Binh Dinh

27. Ms. Nguyen Hai Binh of Sub-DECAFIREP of Binh Dinh gave her presentation on the overview of tuna fisheries data collection system in Binh Dinh province. According to Ms. Binh, the best and hygienic tuna landing facilities in Binh Dinh were available at Quy Nhon where approximately 916 tuna fishing vessels (longline, purse seine, and gillnet) enjoyed the services. Ms. Binh was pleased to report that since the WCPFC supported project has been implemented, improved coordination among concerned agencies and stakeholders has been observed.

28. The participants were also informed of a WCPFC supported pilot program on logsheet for tuna longliners. The logsheet data are being verified by the port sampling data at the three landing sites in Binh Dinh. The number of returned logsheet to longliners, purse seiners, and gillnetters in Binh Dinh since its distribution in 2010 was about 1300, 500, and 300 respectively. Paralleling to this, sampling of length frequency of tuna in cold storage was carried out in collaboration with middlemen. To date, the total number of cold storage sampling was 278, 67, and 6 for longliners, purse seiners, and gillnetters respectively.

29. On the outputs of the pilot project, Ms. Binh referred to the tuna information collection as follows:

##### Longliners:

- Verification of the catch data from a middleman is difficult owing to their method of buying fish from several vessels. Any other additional information was also hard to obtain.
- The similar appearances of bigeye and yellowfin tunas at their juvenile stage, species identification, especially from frozen specimens are difficult.

##### Purse Seiners:

- Evidence from information drawn from 480 logsheets that showed 1384 purse seine fishing trips, it was found that (i) fishing boat skippers were less than willing to provide their logsheet data; and (ii) information obtained was often inconsistent with those obtained from other sources, e.g. unloading data;
- The existing number of enumerators is far too small to cover all existing small fishing ports in Binh Dinh;
- The observer program has proven too costly; it is something that the government with limited budget can hardly afford to implement.

##### Gillnet:

- Landing of tuna catch outside the province of Binh Dinh, and hence loss of the data by those 100 gillnetters registered with the province.

30. It was recommended by Ms. Binh that the existing mechanism for data collection from middlemen could be improved by the new establishment of a long-term information collection from purse seiners and gillnetters. The current WCPFC format solicits information she considered too detail for the existing enumerators to cope. It was recommended by the meeting that routine data collection of tuna landing in Binh Dinh should be established based on the current pilot activities, but using simplified data sheet.

#### Review of tuna fisheries data collection system at Phu Yen

31. Mr. Le Duc Tuong of Sub-DECAFIREP of Phu Yen described the current situation of tuna data collecting in Phu Yen province. There were in Phu Yen 524 tuna longliners, 115 purse seiners, and 144 gillnetters, each of which is powered by ~90HP engine. Collection of tuna landing data from middlemen was made recently at two landing sites out of a fishing port and a total of three landing sites in the province. According to Mr. Tuong, the middlemen were less than attentive to providing any useful data to the enumerators. Over the past 12 months, some 944 samplings from tuna longliners, and 415 samplings from purse seiners. No data were made available by gillnetters as the program for it had just started this year.

32. The short fishing trips (generally less than a week) and frequent landings of Phu Yen purse seiners and longliners reportedly made it difficult to obtain the catch data by a limited number of enumerators. It was suggested that alternative data collection (e.g. logsheet system) should be considered.

#### Review of tuna fisheries data collection system at Khanh Hoa

33. Mr. Lu Thanh Phong of Sub-DECAFIREP of Khanh Hoa presented to the participants the data collection on tuna landing in his province. Out of the total registered fishing boats of 9,704, only 915 of them are propelled by 90 HP engines or larger. The data collection is performed daily through sampling at the ports of unloading.

34. According to the Khanh Hoa province representative, there are currently 97 longliners, 238 gillnetters, and a purse seiner that have participated in the data collection. A list of middlemen has also been made available under this program. While purse seiner and longliners normally land 1-2 tonnes of tuna each from their fishing trip, a larger volume (5-10 tonnes) is normally landed by each gillnetter. Unfortunately some tuna fishing vessels unloaded their catch outside the province, and some fishers held back their cooperation from the enumerators for a lack of incentive.

#### Plans to collect data of unloading/port for gillnet and purse seine fisheries: protocol, format, staff requirements, data submission, and data quality control

35. Some necessary adjustments were made to the training on using port sampling through the enumeration of middlemen to verify the logsheet data submitted by the fishing boat skippers. The reason for these adjustments was in the absence of any legal requirements for their compliance, most middlemen only gave their lukewarm cooperation to the requesting enumerators.

36. Originally, the port sampling data collection is designed for checking the accuracy of logsheet data. It was noted that the training on port sampling data (logsheet of the fishing boats, and biological data of the catch to be provided by the middlemen) was carried out for the local enumerators of the three major tuna landing provinces of Vietnam (Binh Dinh, Phu Yen, and Khanh Hoa provinces) in cooperation with the middlemen. However, the Training noted that cooperation of the middlemen is relatively poor, particularly middlemen of purse seiners. This is because the national legislation of port sampling does not in place.

37. Another attempt to secure better tuna fisheries statistics was brought to light by Mr. Ha of Research Institute of Marine Fisheries (RIMF) who shared with the participants the information on a 5-year project that will be commissioned in 2012. Under this project, the tuna landing data will be collected by Sub-DECAFIREP from 28 coastal provinces, using its own datasheet. The catch data will be collected from various types of fishing

boats: purse seiners, gillnetter, pole and liners, castnetter, liftnetters, otter-board trawlers, and paired trawlers. Observer program is also included under this project. Through the landing data collection, onboard observer program, and logsheet system, it was hope that the RIMF initiatives should make it possible to issue the fishing ground forecasting in the near future.

38. Provided to the participants as “information,” a guideline on protocol for sampling of tuna landings by gillnetter or purse seiners, Mr. Pham Viet Anh contribution below is given as [Annex 3.6](#).

1. Selection of the gillnetters or purse seiners to be sampled after reviewing their usual unloading times of the day. Avoid the sampling from the same vessels; attempt should be made to cover a wide range of the fishing vessels throughout the year.
2. Enumerators should ensure that they are aware of the times of day when the vessel comes to port for unloading (the unloading usually occur in the early morning, e.g. beginning around 1:00 am, so careful scheduling and planning will be required). The enumerator should be at the vessel before unloading begin; and key questions about the catch taken during the trip should be asked. The enumerator should also briefly interview the boat’s skipper and buyer prior to the unloading. The following information is required from the skipper, and will be recorded on the data collection form in the respective area:
  - General information of the vessel: name of the vessel, GRT, etc.
  - Fishing trip: departure/return dates, number of fishing/transit days, general fishing area
  - Catch information: total catch, species composition, any interesting catch, discards, etc.
3. Boat’s skipper and buyer (middlemen) should be interviewed in the case that the catch was transferred at sea or left over onboard the fishing boats.
4. At least three (3) enumerators should present at each unloading; two (2) enumerators for measuring and recording the catch including skipjack, yellowfin and bigeye tuna; and one enumerator for recording number of individual of the bycatch species including billfish, wahoo, mahi-mahi, and shark.
5. The enumerators should set up an area where they can measure the fish at the side of the unloading area, ensuring all stakeholders are aware and in agreement that it will not hinder their work. Waterproof mat or vinyl sheet can be used. The data collectors should have a 1 or 1.2m measuring board with the empty basket, and measure all fish in the selected basket from the vessel and transfer each measured fish to the other empty basket. The data are recorded on the relevant data collection.
6. It is important to ensure the representative of gillnetters is selected and recorded. To achieve this, the samples must be selected by species and/or size before the fish are sorted (Figure 1). Record would be taken only for the length of the catch. It is not necessary to record individual fish weights.
7. At this stage, the enumerators will measure only the samples of skipjack tuna unloaded and all of the yellowfin and bigeye tuna unloaded (if possible). Species identification guides will be used to differentiate the yellowfin and bigeye tuna.
8. For the skipjack tuna, two (2) enumerators will ask to take one of the baskets filling with skipjack tuna as it is transferred from the fish hole of the boat to the wharf. It is important to ensure that the basket is arranged before sorting by size and quality on the wharf. The enumerators will then take the basket to the plastic mat and measure each individual of catch, then placing the fish into the empty basket which is then returned to the place where sorting occurs after all fish have

been measured. Samples at least 100 skipjack per landing is required; the enumerator should determine the average fish in each unloading-basket and then the total number of baskets to select during the unloading process. For example, if there are on average 5 fish in the unloading basket a total of 20 baskets of the skipjack will be randomly selected during the unloading process to measure. The sample of skipjack can then be applied to the estimated total weight of skipjack in the database system, noting that the total skipjack weight has been recorded by the buyer (and obtained by the enumerator after the sampling session).

9. For yellowfin and bigeye tunas, the enumerator will count and measure all of the samples that typically grouped them into one category. If all samples of yellowfin and bigeye cannot be measured, then the enumerator must at least count the number of catch landed. If the individual number of yellowfin and bigeye catch is too difficult to count, sampling should be applied by using one basket. Appropriate number of sampling is recommended at 40 individuals as referred to the SPECIES IDENTIFICATION GUIDE.
10. For other key species, the enumerators will record the total number and weight by species. There will be no attempt to measure these species at this stage, noting that the buyer has recorded the estimated weight by species group, but not by species. The key species include: (i) the individual billfish species; (ii) mahi-mahi; (iii) wahoo; and (iv) shark as referred to the SPECIES IDENTIFICATION GUIDE. The species guide must include striped marlin.
11. For the other minor species, or where it is difficult to get a catch in number for the other minor species, it is recommended that only estimated weight could be collected using the data from the buyer. With regard to the other tunas category mainly found as the neritic tunas such as *Auxis* spp., Kawakawa and bonito, enumerators could refer to the SPECIES IDENTIFICATION GUIDE.

Lectures on species identification of the catch from gillnet and purse seine fisheries, including juvenile tuna bigeye and yellowfin, skipjack, billfish, and swordfish

39. Mr. Tran Chu delivered his lecture on species identification of tuna and tuna-like species, with emphasis on sorting method for juvenile yellowfin and bigeye tunas. Tunas are commonly caught by longline, gillnet and purse seine, and current emerging issue in tuna fisheries is bycatch, such as billfish, swordfish, and shark.

Practice with species identification and data collection at fishing port

40. The training in species identification was conducted in practical session held at Quy Nhon fishing port, the landing facilities mainly devoted to tuna unloading from gillnetters and purse seiners. Inconvenience at other fishing ports has recently diverted a good number of longliners to Quy Nhon leading to overcapacity and deteriorating hygienic condition. During the training, the participants had a chance to work on species identification of juvenile bigeye and yellowfin tunas using external morphological features. During the time of their practice in the wee hours of the morning (about 0200 to 0300AM), the trainees simply missed the chance to observe the unloading of tuna bycatch that had taken place a few hours before the training session.

### III. RECOMMENDATIONS OF THE TRAINING WORKSHOP AND PROPOSED AGREEMENTS

#### Protocols, format, staff requirements, data submission, and data quality control

41. With regard to the format of data recording sheet and the port sampling, it was recommended that the current format used for tuna longliners should be used as model for gillnetter and purse seiners after necessary revision. The RIMF should consider standardization of the recording formats for purse seiners and gillnetters by using the existing WCPFC format as template.

42. Under the Vietnamese fisheries law, all fishing boats driven by 20 HP engines and above are required to submit their catch logsheet to the provincial fisheries officers on a 3-monthly basis. These data are compiled by fishing areas by Sub-DECAPFIREPs who submit them to RIMF for data analysis and reporting. It was pointed out during the training that the usual delay in data submission to RIMF could be reduced by further training of Sub-DECAPFIREP staff on data input.

43. It was also reported that a WCPFC pilot logsheet project implemented in Khanh Hoa province has contributed considerably toward the development of a national logbook program. The Provincial People Committee in Khanh Hoa also took one step further in training fishers on the use of logsheet, the fishing record that the fishes are advised to submit quarterly. It was reported that as many as 2,000 logsheets were submitted each quarter, although their quality, according to the Sub-DECAPFIREP of Quang Ngai, could still be improved. The idea that appreciation of the importance of fishing information as provided by logsheet was favored by the training participants as something that should be promoted.

44. It was observed that the exact location where fishing took place may not be reported correctly by the fishers as they lack of proper tool to locate their position or some other motivation for misreporting. Some position locating tools, e.g. vessel monitoring system (VMS) was recommended as helpful in pinpointing the fishing location; however, the Vietnamese national VMS program for offshore vessels is yet to get off the ground.

45. It was recommended that the experiences gained by the WCPFC project could be put into use by RIMF in its 5-year project, particularly that relating to the fishing logsheet. The WCPFC's format and its experiences in the three central provinces should be drawn upon by the RIMF to adapt them as standard logsheets to fit other types of fishing gear.

46. It was suggested that a local focal point for collecting tuna fisheries data should be established by a legal provision. The capacity and skills of enumerators, especially in collecting data from gillnetters and purse seiners should be further enhanced. To attract fishers' attention to tuna data collection, certain incentives and criteria for awarding them should be established. The provision of annual renewal of fishing license, for example, should be made on a condition of regular submission of the fishing logbook.

47. It noted that an onboard tuna longline observer program has been implemented under WPEA OFM Project using the observers recruited from RIMF and Sub-DECAPFIREP. Some other observer trips have already been carried out on-board tuna longliners in Binh Dinh, Phu Yen and Khanh Hoa under collaboration with WWF of Vietnam. In 2010, a total

of 15 trips made by observers were carried out in Vietnam using the format for observer data record based on the previous “Assessment of Living Marine Resources in Vietnam” project with integration of the WCPFC’s format. It was suggested that the format should be reviewed, keeping in mind the more standard format of regional observer program currently being conducted by WCPFC. It was noted that the observer program on-board gillnetters and purse seiners did not follow the plan of activities under WPEA OFM Project.

48. Even though the observer program had been conducted by RIMF under Development of Fishing Ground Forecasting Project during 2007-2010, Vietnam has yet to start data collection from observer trips on tuna longline vessels under WPEA OFM project. The evaluation of the program has thus been delayed. The key points were raised during the discussion included the establishment of a national observer program and adoption of standard formats of observer forms as used by tuna fishing vessels of WCPFC for future implementation. The national observer program should be initially commissioned with appropriate legal frameworks, human and financial resources, and collaboration mechanisms on observer activity implementation among fisheries agencies in Vietnam.

#### Using of logsheet for gillnet and purse seine fishing

49. It was suggested that in order to improve the quality of data obtained from the logbook, the validation of the logsheet data could be made through (i) port sampling survey through middlemen through the on-going WPEA project; (ii) on-board observer program through a national study; or (iii) VMS program. The exact locations of the fishing operation could be pinpointed by area-based data and VMS records. Stronger cooperation of fishers with the national data collection program could be pursued; stakeholders consultation/visit, and training for fishers should be organized.

50. It was noted that standardization of the data collection format currently used by WCPFC, RIMF and DECAFIREP would help effective data collection and streamlining the data submission channel and processing. The data collection formats for gillnet and purse seine could be standardized right away, while DECAFIREP could share the data from the logsheet submitted by Sub-DECAFIREP with RIMF to avoid the double submission to RIMF directly by fishers. With the interest in efficacy of the data collection and analysis, it was suggested that exploration by DECAFIREP and RIMP, particularly on the relationship between fishers and middlemen, should be facilitated.

51. With the problem of the chronic shortage of local enumerators in view, it was recommended that the local enumerators that have been trained under the Local Provincial Committee program should be mobilized for routine data collection by the program that supports the national database.

52. It was suggested that the data compilation from logsheets and their analysis should become much more effective if rerouting of the data submission could be made from Sub-DECAFIREP to RIMF for initial analysis before their submission to DECAFIREP. In order to do this effectively, the Sub-DECAFIREP’s human resource capacity should be enhanced, particularly to perform the validation of logsheet data.

53. Concerning the WPEA OFM project, a more reliable result from its data analyses could be made through their validation with the results of other DECAFIREP’s surveys, e.g. observer program, port landing survey, etc.



54. It was further concurred that DECAFIREP would produce the final report of the national tuna catch data. This report should be shared with Sub-DECAFIREM, RIMF, and other key stakeholders at both local and national levels.

#### Port landing survey for tuna gillnet and purse seine

55. It was resolved from the discussion on the survey of port landing for tuna gillnet and purse seine the followings:

##### *Improvement of data quality for port sampling survey:*

- Active participation of fishers, vessels' owners, and middlemen (as tuna catch collectors) could be mobilized through regular/ad hoc stakeholder consultation/meeting to share their common understanding, especially on challenging issues. Appropriate incentives should be brought to use to enhance their participation.
- Port sampling data on a fishing area should be validated with other dataset, e.g. middlemen interview
- Building more capacity of the enumerators by recruiting more personnel and enhancing their data collection skills, e.g. in species identification and sampling method.

##### *Format of the data collection at port sampling:*

- The format for data collection compatible with that of WCPFC should be developed/harmonized;
- For long-term data collection at local and national levels, consultative meetings with key stakeholders should be organized as follows:
  - National meeting: DECAFIREP, RIMF, WCPFC, etc.
  - Local meeting: Sub-DECAFIREP, fisheries supervisors, enumerators, middlemen, fishers, members of the People Provincial Committee, etc.
  - Annual review workshop (national)

##### *Protocol, data analysis, and reporting*

- Protocol and data analysis for port landing data should be referred to or follow WCPFC or FAO Guidelines.
- Make use of TUFMAN for quality control and management of the data

#### Recommended follow-up actions

56. To facilitate improvement of tuna data collection in Vietnam, the Training noted on the following follow-up actions.

##### *WPEA-OFM Project*

- Strengthen in-country coordination with national relevant agencies for improvement of national information collection for tuna fishery
- Training on tuna species identification, scheduled for March 2012
- Workshop on catch estimation, scheduled for April 2012

##### *SEAFDEC:*

- Appropriate technical assistance to Vietnam: (i) tuna information collection in cooperation with regional agencies (e.g. capacity building program on port-sampling training, data analysis and reporting, database development); and (ii) technical transfer on reduction of post-harvest losses on-board tuna fishing boats.

##### *RIMF:*

- Tuna fisheries statistic program (catch and biological sampling programs will be carried out through the 5-year project)
  - Monthly catch and size frequency sampling covering all coastal waters of Vietnam including longline, gillnet, and purse seine.
  - Quarterly sampling on biological parameter, only central part of Vietnam waters, including longline, gillnet, and purse seine.
- Cooperation with WCPFC on tuna sampling program, focusing at port sampling and observer program.

*Fisheries Supervisors:*

- Sub-DECAFIREP will facilitate the process of establishment of MOU with the coastguard to deliver and collect the fishing logsheet.
- Suggested that Sub-DECAFIREP should nominate relevant staffs to regularly involve in the sampling program.

57. The major achievements of the Training Workshop:

- a. Port sampling procedures for gillnet and purse seine (with sampling forms, and protocols for sampling survey procedure and arrangement for data collection toward the analysis and reporting) have been established. To follow-up this, Sub-DECAFIREP will appoint a team for implementation.
- b. Through this training program, enumerators for tuna data collection for gillnet and purse seine sampling has been trained.
- c. Plan for future establishment of mechanism/system for collecting data from tuna gillnet and purse seine, including training program of RIMF for longliners, gillnetters, and purse seiners have been worked out and adopted.
- d. The report of this training, including the list of staff involved in the port sampling and their contact information, will be published.
- e. Plan for general arrangement between Sub-DECAFIREP and DECAFIREP on tuna data collection at the national level has been worked out and endorsed by the representatives of the concerned agencies.

#### IV. CLOSING OF THE WORKSHOP

58. Dr. Worawit Wanchana of SEAFDEC expressed his thanks to the resource persons and all participants for their value contributions, active participation, and fruitful discussions. He highlighted the facts that the quality and timeliness of tuna information collection in gillnet and purse seine fisheries of Vietnam depend largely on the national enumerators and all of those who are involved in the process of data processing and reporting. The completion of all tuna information collections that also includes tuna longline in Vietnam also depends on the efforts of all national partners and key participants. To meet the future needs, there may be some activity at regional level that SEAFDEC or other organizations may lend their support.

59. Mr. Pham Trong Yen delivered his concluding words for the training. He expressed special thanks to SEAFDEC for their continuous assistance for the improvement of a long-term strategy of fisheries data collection and management for tuna fisheries in Vietnam. He also expressed his gratitude to Dr. Worawit Wanchana and Mrs. Penchan Laongmanee for their active contribution to this important training. He thanked also to the organizers of the training, in particular Mr. Pham Viet Anh and staff of Sub-DECAFIREP, for hosting the training. Again appreciation was extended to the SEAFDEC and the funding from Japanese Trust Fund that was channeled through SEAFDEC.

## LIST OF RESOURCE PERSONS AND PARTICIPANTS

RESOURCES PERSONS

Name	Organization
1. Mr. Pham Trong Yen	Directorate of Fisheries, Ha Noi
2. Mr. Nguyen Ba Thong	Center for Fisheries Informatics, Ha Noi
3. Mr. Pham Viet Anh	Department of Capture Fisheries and Resources Protection (DECAFIREP), Ha Noi
4. Vu Viet Ha	Research Institute for Marine Fisheries, Hai Phong
5. Mr. Tran Chu	Research Institute for Marine Fisheries, Hai Phong
6. Dr. Worawit Wanchana	Southeast Asian Fisheries Development Center/Training Department (SEAFDEC/TD)
7. Ms. Penchan Laongmanee	SEAFDEC/TD

PARTICIPANTS

Name	Organization
1. Mr. Le Trung Kien	Directorate of Fisheries, Ha Noi
2. Mr. Lu Thanh Phong	Sub-DECAFIREP, Khanh Hoa
3. Mr. Vu Quoc Dung	Sub-DECAFIREP, Khanh Hoa
4. Mr. Le Duc Tuong	Sub-DECAFIREP, Phu Yen
5. Mr. Tran Ngoc Nhan	Sub-DECAFIREP, Phu Yen
6. Mr. Hoang Quang Minh	Sub-DECAFIREP, Da Nang
7. Ms. Dang Duy Hai	Sub-DECAFIREP, Da Nang
8. Mr. Tran Luc	Sub-DECAFIREP, Ba Ria-Vung Tau
9. Mr. Phan Anh Dung	Sub-DECAFIREP, Ba Ria-Vung Tau
10. Mr. Vo Van Thanh	Sub-DECAFIREP, Quang Nam
11. Mr. Nguyen Minh Tu	Sub-DECAFIREP, Quang Ngai
12. Mr. Le Van Son	Sub-DECAFIREP, Quang Ngai
13. Mr. Ly Bao Thanh	Sub-DECAFIREP, Binh Thuan
14. Mr. Nguyen Quang Minh	Sub-DECAFIREP, Binh Thuan
15. Mr. Ly Thanh Hai	Sub-DECAFIREP, Tam Quan
16. Mr. Nguyen Van Trieu	Sub-DECAFIREP, Tam Quan
17. Mr. Nguyen Thanh Phuoc	Sub-DECAFIREP, Tam Quan
18. Mr. Nguyen Hai Binh	Sub-DECAFIREP, Binh Dinh
19. Mr. Ly An	Sub-DECAFIREP, Binh Dinh
20. Mr. Nguyen Duy Lam	Sub-DECAFIREP, Binh Dinh

## WORKSHOP AGENDA

Times	Contents	Facilitators/ Presenters
<b>DAY 1 (27 February 2012)</b>		
08.00 - 08.30	Registration	SUB-DECAFIREP
08.30 - 08.40	Introduction of participants	DECAFIREP
08.50 - 09.00	Welcome remark	Dr. Worawit Wanchana
09.00 - 09.10	Opening speech	Mr. Pham Trong Yen
<b>COFFEBREAK (09.10 - 09.30)</b>		
09.30 - 10.00	Overview tuna fisheries in Southeast Asian Region	Dr. Worawit Wanchana
10.00 - 10.30	Overview of tuna fisheries in Vietnam	Mr. Pham Viet Anh
10.30-11.00	Conducted and ongoing activities of SEAFDEC in dealing with improvement of information collection on tuna in the region	Ms. Penchan Laongmanee
11.00-11.30	Overview of data collection activities for longline, gillnet and purse seine in Vietnam and WCPFC (logsheet, port sampling, landing data collection, observer)	Mr. Pham Viet Anh
<b>LUNCH (11.30 - 14.00)</b>		
14.00 - 14.20	Recent WCPFC fisheries trends and data provision obligations of member countries to WCPFC	Mr. Pham Viet Anh
14.20-14.40	Survey on accuracy of information on tuna species at tuna processing factories in Thailand	Ms. Penchan Laongmanee
14.40-15.00	Review of tuna fisheries data collection system at Binh Dinh (longline, purse seine and gillnet fishery)	Sub-DECAFIREP Binh Dinh
15.00-15.20	Review of tuna fisheries data collection system at Phu Yen (longline, purse seine and gillnet fishery)	Sub-DECAFIREP Phu Yen
15.20-15.40	Review of tuna fisheries data collection system at Khanh Hoa (longline, purse seine and gillnet fishery)	Sub-DECAFIREP Khanh Hoa
<b>COFFEBREAK (15.40 - 16.00)</b>		
16.00-16.20	Plans to sample unloading data collection for gillnet and purse seine fisheries (protocols, forms, staff requirements, data submission, data quality control)	Mr. Pham Viet Anh
16.20-17.00	Discussion on unloading data collection	All participants
<b>DAY 2 (28 February 2012)</b>		
8.00-9.30	Plans to sample logbook data collection for gillnet and purse seine fisheries (protocols, forms, staff requirements, data submission, data quality control...). How to integrate with national logbook program	DECAFIREP
9.30-10.10	Discussion on logbook program	All participants
<b>COFFEBREAK (10.10 - 10.40)</b>		
10.40-11.00	Plans to sample observer data collection for	Mr. Pham Viet Anh

	gillnet and purse seine fisheries (protocols, forms, staff requirements, data submission, data quality control) and how to collaborate with other countries to deter, prevent and eliminate IUU fishing in tuna fisheries	
11.00-12.00	Discussion on observer program	All participants
LUNCH (12.00 - 14.00)		
14.00-17.00	Lectures on species identification of gillnet and purse seine fisheries (small tuna (bigeye and yellow fin, skipjack, billfish, swordfish...))	Mr. Tran Chu
DAY 3 (29 February 2012)		
Morning	Practice with species identification and data collection at fishing port	All participants
LUNCH (12.00 - 14.00)		
14.00 - 15.30	Main recommendations/outcomes from the workshop	All participants
15.30 - 16.00	Closing meeting	SEAFDEC and DECAFIREP

## Overview of Tuna Fisheries in Southeast Asian Region

National Training on Improvement of Data Collection for Tuna Gillnet and Purse Seine in Vietnam  
27-29 February 2012, Binh Dinh, Vietnam

Worawit Wanchana  
SEAFDEC Training Department

### Outline

- Overall – catch of oceanic and neritic tunas
- Tuna fisheries in Southeast Asia
  - Overview and current update on stock status of tuna resources in Southeast Asia (SEAFDEC Ad-hoc study and long-term information collection on tuna fisheries statistics)
  - Update information from tuna regional fisheries management organizations in Southeast Asia (WCPFC and IOTC)

### Outline

- Key issues and concerns on development and management of tuna fisheries in Southeast Asia
  - Common issues with regard to tuna catch data information collection in Southeast Asia
  - Gaps and constraints in collecting information on tuna catch data
  - Follow up actions at regional level by SEAFDEC and others
  - Current situation of tuna in CITES
- Policy recommendations for sustainable tuna fisheries in Southeast Asia

### Objective

- Update information on current situation of tuna fisheries in Southeast Asia based on SEAFDEC and other relevant initiatives
- Facilitate discussion on appropriate policy actions of Southeast Asian countries for:
  - Future improvement of data/information collection on tuna fisheries
  - Formulation of policy recommendations for coordinated position of Southeast Asian countries related to tuna issues for CITES COP16

### Overall Tuna Catches

■ Pacific Ocean ■ Indian Ocean ■ Atlantic Ocean

■ Skipjack ■ Yellowfin ■ Bigeye ■ Albacore ■ Other

- 7% of total marine capture fisheries
- Annual catch 4 million tons
- Skipjack accounts for half of the world tuna catches, and main catch in each ocean
- Fully exploited
  - yellowfin tuna in Western and Central Pacific Ocean
  - bigeye tuna and albacore in Indian Ocean

### Tuna Fisheries in Southeast Asia

- Yellowfin, bigeye, skipjack, and albacore tuna
- Longline, purse seine, pole and line, handline and others.

### Ad-hoc Study by SEAFDEC

- Since 2008
- I-4, P-9, T-9, and V-3: 25 major landing sites
- IO, SCS, WCP, and Internal waters

### South China Sea

**Tuna Landing in SCS Sub-area**  
(exclude data from Indonesia and Thailand since 2007)

Sp.	Trend
SK	decrease → stable
YF	stable
BY	stable ?

### Western Central Pacific Ocean

**Tuna Landing in WCPO Sub-area**  
(exclude data from Indonesia since 2007)

Sp.	Trend
SK	increase
YF	increase
BY	increase and decrease

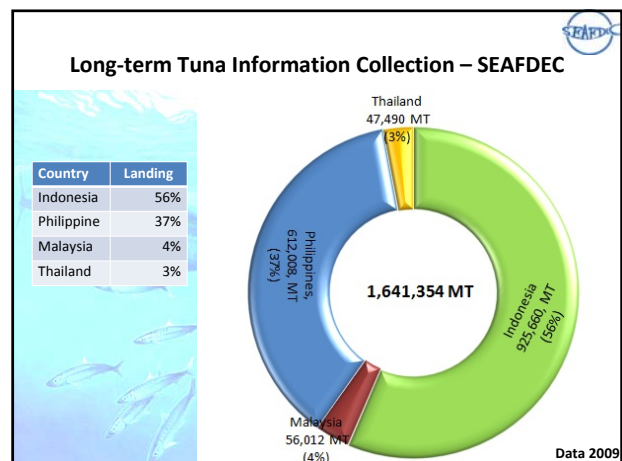
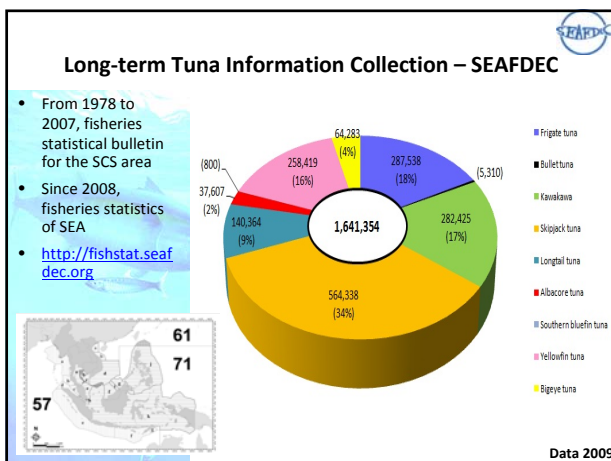
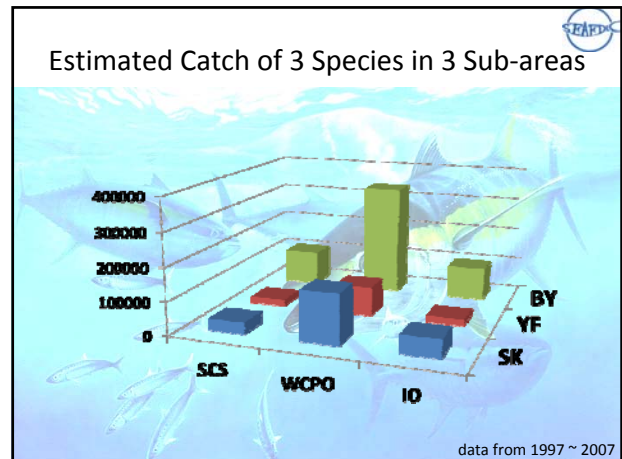
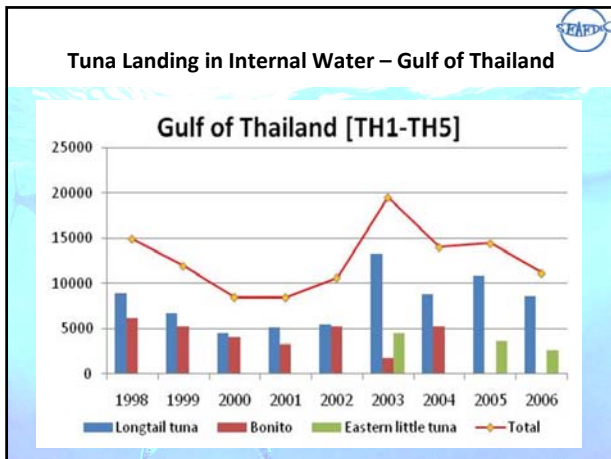
### Indian Ocean

**Tuna Landing in Indian Ocean**

Sp.	Trend
SK	stable
YF	?
BY	?

### Tuna Landing in Internal Water – Indonesia

### Tuna Landing in Internal Water – Philippine



### Tuna RFMOs in Southeast Asia

**Western Central Pacific Ocean (WCPO)**

- Philippine (member), Vietnam and Thailand (cooperating non-member)

**Indian Ocean (IOTC)**

- Indonesia, Philippine, and Thailand - members

### Update Information from WCPO

- Overfishing could be occurring in bigeye tuna
- Not for yellowfin tuna, but high mortality of juvenile in Indonesia and Philippine: improvement of the estimates is needed, and keep monitoring domestic catches of Indonesia and Philippines
- Skipjack currently moderately exploited
- Albacore likely overfishing
- Improvement of estimates for catches from purse seiners

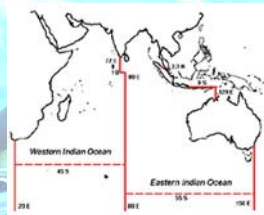

Sp.	status
BY, AC	Red
YF	Yellow
SJ	Green

The 7<sup>th</sup> Regular Session of Scientific Committee, Aug 2011



### Update Information from IOTC

- Bigeye catch keeps at level of ~ 100,000 t
- Yellowfin close to overexploited, increase level to beyond 300,000 t to maintain the stock

13th Meeting of Scientific Committee of IOTC, Dec 2010

### Fisheries Characteristics in Southeast Asia

- Underestimated number of fishers, boats, gears, landing sites. Especially small-scale fisheries where information collection is still under improvement
- Multi-gear and multi-species fisheries
- Relatively poor coordination among agencies concerns in management of natural resources nationally, sub-, and regionally. Particularly on transboundary fish stock including tuna and other pelagic
- Good price of neritic tuna in domestic market in most of SEA countries

### Common Issues in Southeast Asia

- Budget and human resources for data collection inadequate
- Coordination among data collecting/reporting agencies, and others unsystematic
- Insufficient Tuna stock assessment in Southeast Asia, and database system under developing
- Need to use information/data from various sources to improve data quality

### Key Issues: Onboard Fishing Boats

- Awareness of fishing masters and fishers on the importance of reporting catch data
- Catch data from fishing logbook is likely under reported
- National observer program not in place
- Fishers having difficulty in filling the logbooks

### Key Issues at Landing Sites

Issues	Recommendations
Large no of fishing boats and landing sites	???
Difficult to identify species of juvenile stages of bigeye and yellowfin tuna	DNA analysis (costly and not practical), other suggestion ???
Catch from inside and beyond EEZ ?	VMS, fishing logbook, observer program (all may not applicable in
Irregular collection of data/info	???
Method to validate catch data from logbook with the data of landing sites	Observer program ?

### Key Issues: Onboard Fishing Boats

Issues	Recommendations
Awareness of fishing masters and fishers on the importance of reporting catch data	Promote the use of tuna fishing logbook
Catch data from fishing logbook is likely under	Incentive in filling logbook
National observer program not in place	Establish legal framework
Fishers having difficult in filling the logbook	Develop mechanism for officials to help in filling the logbook
Too many local names that may different in species	Capacity building program, or standardize the local names

## Key Issues: Tuna Canneries

Issues	Recommendation
World tuna production capacity in increasing but long-term supply will be reduced	???
Rapidly increasing cost of raw materials	???
Good quality of data insufficient	???
Pressure from NGOs	???
Legal framework to use catch data from canneries inadequate	???
Cooperation among stakeholders	Establish legal framework

## Gaps and Constraints

Gaps and Constraints	Suggested Actions
Identification of tuna species, especially juvenile stage of yellowfin and bigeye tuna	Specific training program, simple species identification of juvenile and others
Stock assessment method for tuna	take into account the available validated data (total catch, fishing efforts, fishing grounds, oceanographic cond., etc.)
Insufficient no of staff and capacity to collect data/info	???

## Follow-up actions at regional level by SEAFDEC and others

- Consult with countries on possible continuation of the development of regional tuna fisheries database
- Improve quality and timeliness of data through capacity building programs
  - Onboard tuna fishing vessels: logbooks, observers onboard
  - Landing sites: catch unloading, species identification
  - Cannery: accuracy in species identification
- Carry out study on reduction of juvenile tuna catch from purse seines, ring nets (FAD Fisheries), pole and line, and by-catch in tuna fisheries. Likewise the meeting also encouraged selectivity studies for possible technology intervention to eliminate/reduce incidental catches of juvenile tuna and by-catch.
- Translate existing relevant information materials (e.g. guidebooks, posters, brochures) issued by countries into English language for dissemination to the other countries in the region
- Consult with experts on stock assessment in order to come up with appropriate plan of activity to support the countries in the improvement of their respective information collection

National Training on Improvement of Data Collection for Tuna Gillnet and Purse Seine Fisheries in Vietnam  
Binh Dinh, 27 – 29 February 2012

Overview of tuna fisheries in Vietnam

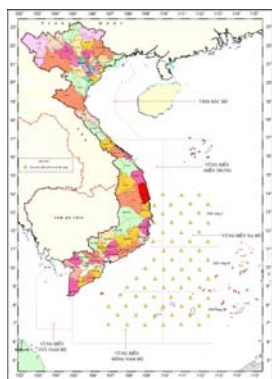


Department of Capture Fisheries and Resources Protection (DECAFIREP)  
Directorate of Fisheries (D-FISH)

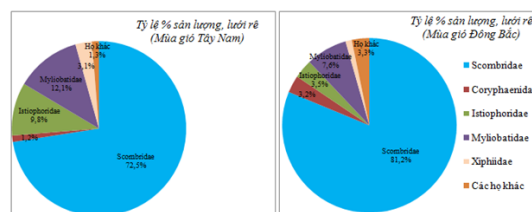
Introduction

- In Vietnam, Tuna is living in the central and south eastern sea of Vietnam. There are about 14 species and can be divided into group:
  - The offshore tuna( yellow fin and big eye tuna)
  - The small tuna (Bullet, skipjack, frigate tuna...)
- Main fleets targeting tuna: Longline, purse seine and gill net fleet.
- From 2000-2005, studied areas 6°30N-14°00N and be divided into 3 small areas (zone): Zone 1 (from 11°00N up to the North); Zone 2 (8°30N-11°00N) and zone 3 (8°30N up to south).

Stations on the survey of pelagic species in 2000-2005

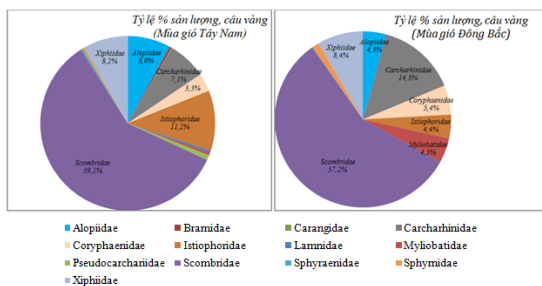


Species compositions



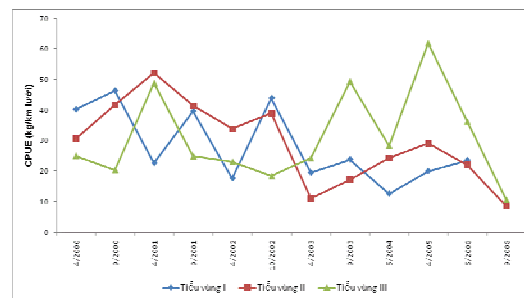
South west monsoon North East Monsoon  
Species composition caught by gillnet

Catch composition in Longline fishery



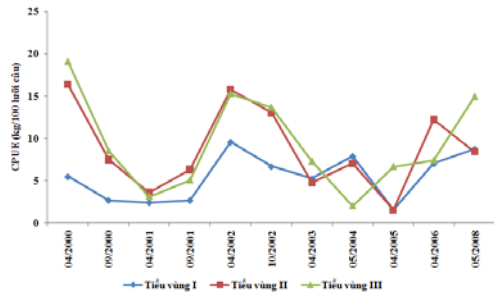
Left graph: Southwest monsoon and right : North East Monsoon

CPUE ( kg/ km of net) of gill net fishery



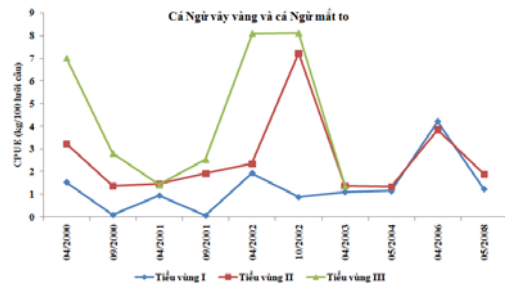
Green line: Zone I; Red: Zone 2; Blue: Zone 3

CPUE ( kg/ 100 hooks) – Longline



Green: Zone 1; Red: Zone 2; Blue: Zone 3

CPUE for Yellowfin tuna and Big eye tuna ( kg/ 100 hooks) offshore of central and Southeastern of Vietnam

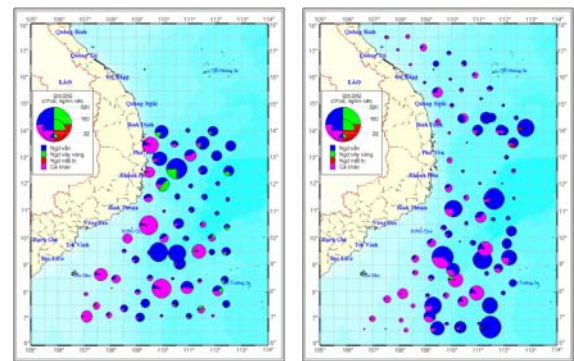


Green: Zone 1; Red: Zone 2; Blue: Zone 3

Stock distribution

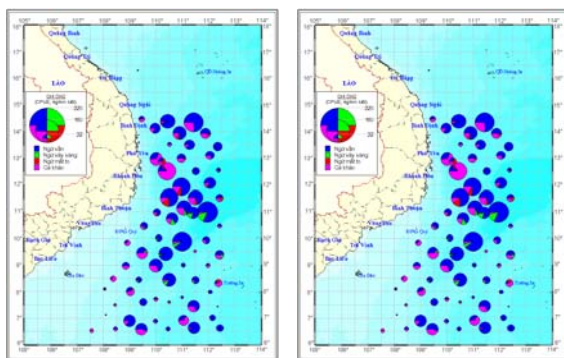
- Yellowfin tuna (*Thunnus albacares*) and big eye tuna (*Thunnus obesus*) distribute in offshore of Binh Dinh and Phu Yen, from 110°30E-112°00E, 12°00N-13°30N, and offshore of Khanh Hoa (110°00E-112°00E, 12°00N-13°00N) and west of Truong Sa island (110°00E-112°00E, 8°00N-10°00N).
- Skipjack (*Katsuwonus pelamis*) distributes in the sea of Phu Yen (109°30E-111°30E, 12°00N-14°00N), Khanh Hoa – Binh Thuan (110°30E-112°30E, 11°00N-12°00N) and offshore of Vung Tau (109°00E-111°00E, 8°00N-10°00N).

South western monsoon



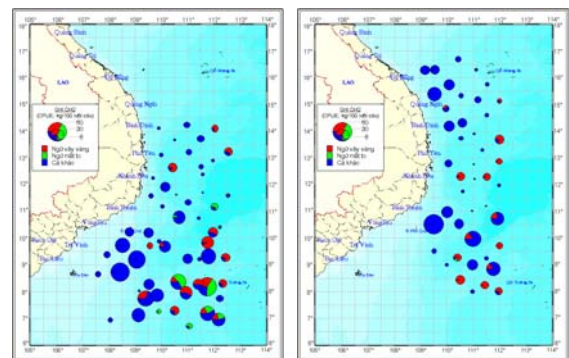
Catch rate of big eye and yellow fin in gill net

North eastern monsoon



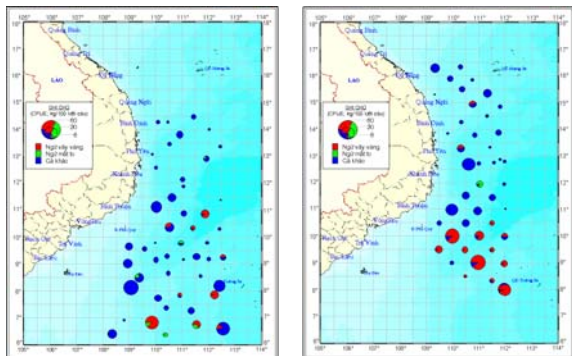
Big eye and yellow fin tuna vs gill net fishery ( catch rate)

PHÂN BỐ NGUỒN LỢI (Mùa gió Tây Nam)



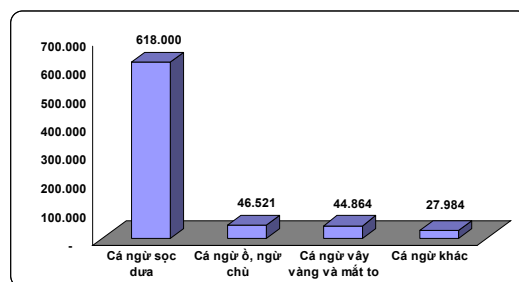
Phân bố năng suất cá nư vảy vàng và nư mắt to bằng nghề câu vng

**PHÂN BỐ NGUỒN LỢI (Mùa gió Đông Bắc)**



Phân bố năng suất cá ngừ vây vàng và ngừ mắt to bằng nghề câu vàng

**Estimated stock**



Stock of tuna in the sea of Vietnam ( skipjack, bullet, jelowfin and big eye and other tuna species)

**TOTAL NUMBER OF FISHING VESSELS**

Fisheries	Capacity (HP)	Years			
		2007	2008	2009	2010
Gillnet	20<	2026	4561	4573	2544
	20 - < 50	984	2066	1913	1642
	50- < 90	331	693	819	709
	90 - < 150	43	145	210	245
	150 - < 250	46	77	152	160
	250 - < 400	28	255	249	222
	> = 4000	1	14	23	33
<b>Total</b>		<b>3459</b>	<b>7811</b>	<b>7939</b>	<b>5555</b>
Purse seine	20<	0	22	32	48
	20 - < 50	104	155	84	110
	50- < 90	581	205	80	139
	90 - < 150	239	199	106	115
	150 - < 250	106	79	130	117
	250 - < 400	40	101	108	131
	> = 4000	27	3	0	5
<b>Total</b>		<b>1097</b>	<b>764</b>	<b>540</b>	<b>665</b>

**INVESTMENT AND BENEFIT**

**Gillnet fishery:**

Initial investment: 846,2 billion VND/vessel  
 Investment rate per labour capital: 49,3 million VND/labour  
 Employment rate at age of 18-40: 52,36% and 29,00%

**Purse seine fishery:**

Initial investment : 737,1 triệu đồng/tàu  
 Investment rate per labour capital : 71,5 million VND/labour  
 Employment rate at age of 18-40: 47,28% and 32,06%

**TRÂN THÀNH CẢM ƠN**



## Ongoing activities of SEAFDEC in dealing with improvement of information collection on tuna in the region

National Training on Improvement of Data Collection for Tuna Gillnet and Purse Seine Fisheries in Vietnam,  
27-29 February 2012, Binh Dinh, Vietnam

By Penchan Laongmancee

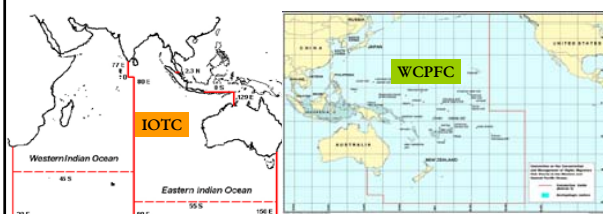
- Highly Migratory Species Information Collection Project in Indonesia, Philippine, Thailand and Vietnam
- Toward Better Utilization and Harmonized Information for Fisheries Management in Southeast Asia

## Key Issues: Highly Migratory Species Information Collection Project

- Tuna stock in the high sea has depleted;
- Attempt of the Tuna RFMOs to estimate the tuna stocks;
- Insufficient technical information on the tuna captures in the Southeast Asian waters which are identified by RFMOs;
- Technical support to MCs/RFMOs on information collection of tuna captures from the Region; and
- Attempt to assess potential tuna production in the various sea areas of the region.



## Related Regional Fisheries Management Organization (RFMO)



**SEAFDEC Members in IOTC**  
Indonesia, Malaysia, Philippine and Thailand

**SEAFDEC Members in WCPFC**  
Philippine  
Cooperating Non-member:  
Indonesia, Thailand and Vietnam

## Points & Challenge...Project's Framework

- Clarification
  - tuna fishing areas from/of the tuna landing
  - production of tuna captured in EEZ of SEA Countries by distinguishing between those from high-sea
- For countries who does not have fishery statistic system, fishing licensing system may be used as management tools to support information collection through catch documents such as logbook, etc.

## Progress of the project:1

Project period 2008-2012

- Three working group meeting were conducted for reviewing status of tuna fisheries/production and select data collection port
- Support budget for data collection by enumerator in Indonesia and Vietnam



- Support budget for data verification on tuna production at the selected fishing ports and tuna landing site in Philippine and Thailand

### Progress of the project:2

- Develop database of tuna data
- Cooperate with Japanese researcher to study accuracy of species identification of yellowfin and bigeye tuna in three canneries of Thailand to trace the reliable of market report (more information in another presentation)
- Technical support for improvement of tuna data collection ie, National Training on Improvement of Data Collection for Tuna Gillnet and Purse Seine Fisheries in Vietnam



### Selected sites for tuna information collection in Indonesia

- Banda Aceh
- Kupang
- Gorontalo
- Pelabuhan ratu



### Selected sites for tuna information collection for Vietnam

- Binh Dinh
- Phu Yen
- Khanh Hoa



### Data Verification on Tuna Production at the Selected Fish ports and Landing Sites of Philippine

- Main fishport
  - General Santos
  - Navotas
- Tuna landing areas
  - Palawan
  - Eastern Samar
  - Zambales,
  - Pangasinan
  - La Union and
  - IlocosSur
  - Zamboanga



### Data Verification on Tuna Production at the Selected Fish ports and Landing Sites of Thailand

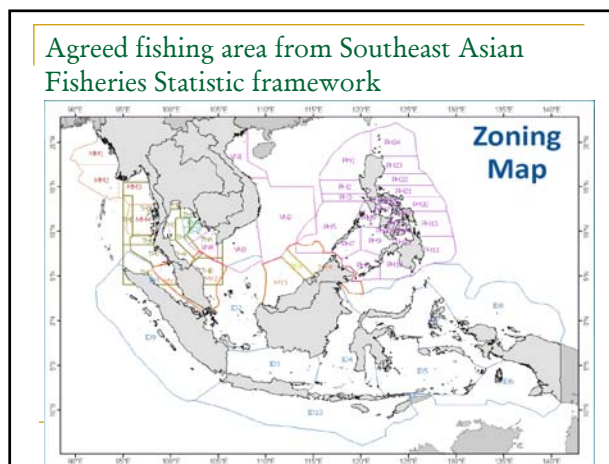
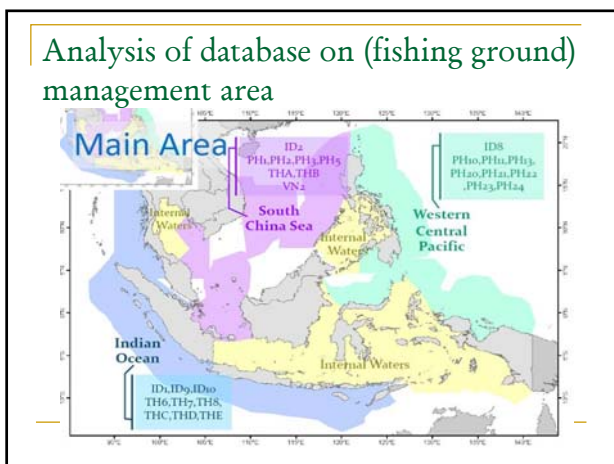
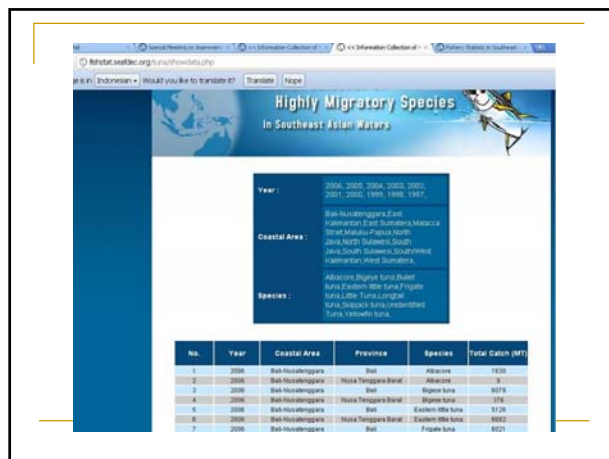
- Samutprakan
- Rayong
- Songkhla
- Pattani
- Ranong
- Phannga
- Phuket
- Krabi
- Satul



### Database for tuna data from IPTV

<http://fishstat.seafdec.org/tuna/>





### Toward Better Utilization and Harmonized Information for Fisheries Management in Southeast Asia Project

**Activities**

- Improved the statistics framework to facilitate the compilation, exchange and analysis
- Compiled production of major tuna and tuna-like species
- Strengthen the capacity in collecting and providing the statistics for compilation at regional/global level

### Compilation of Fisheries Statistics

**1978**  
 • Fishery Statistical Bulletin for the South China Sea Area

**2004**  
 • Revising the framework for collection of regional fishery statistics

**2007**  
 • Harmonized the standard definitions and classifications

**2008 onwards**  
 • New statistics framework  
 • SEAFDEC and FAO harmonized statistics questionnaires and reporting  
 • Focal points of the respective Member Countries





**National Training on Improvement of Data Collection for Tuna Gillnet and Purse Seine Fisheries in Vietnam Binh Dinh, 27 – 29 February 2012**

**Overview of data collection activities for longline, gillnet and purse seine in Vietnam under WPEA project**



Department of Capture Fisheries and Resources Protection (DECAFIREP)  
Directorate of Fisheries (D-FISH)

**Data collection overview**

- Established tuna data collection groups at each province (Binh Dinh, Phu Yen and Khanh Hoa)
- Each team included: 01 supervisor and 03 enumerators
- Financial resources: initially funded by WPEA project but there is a need to establish a national program for tuna fishery data collection
- Collected data types: port sampling, unloading, logbook, observer data
- Implemented fisheries: longline, Gillnet and Purse seine
- Tag recovery: there is no tag to be recovered

**Data collection**

LANDINGS (HIGH SEASON)	TOTAL LANDINGS DATA			SIZE/SPECIES SAMPLING			Sampling Resources to be allocated
	LL	PS	GN	LL	PS	GN	
<b>BINH DINH</b>							
QUY NHON	0	300	50				PS/GN - 4 Enumerators
BE GI	0	100	100				LL - 2 Enumerators
TAM QUAN BAC	300	50	40				
BINH DINH	300	450	190	150	250	30	25
<b>KHANH HOA</b>							
HON RO	30	0	150				PS/GN - 4 Enumerators
DA BAC BANG	0	0	0				LL - 2 Enumerators
KHANH HOA	30	0	150	150	0	30	25
<b>PHU YEN</b>							
PHUONG 6	150	0	0				
PHUONG PHU DONG	150	0	10				
THUEN COGAI	70	0	0				PS/GN - 4 Enumerators
THON PHU BANG	0	250	0				LL - 2 Enumerators
THON PHU THO 3	0	80	0				
THON PHU THO 2	0	0	110				
THON S. KA AN NHON DONG	0	0	110				
PHU YEN	450	110	130	150	230	30	25
All provinces	750	560	500	450	530	0	50

Notes  
 1. Two teams of 3 enumerators have been allocated to sampling in each province. One team is responsible for longline landings and the other team is responsible for PS and GN landings. The WPEA recommended additional resources (Enumerators) to ensure the PSDA (Data) are covered.  
 2. Based on data collection to date, one team of (two) enumerators can collect data from buyers on total landings (i.e. catch by species landed from about 100 vessel landings in one month (this requires to about 50% coverage in Tam Quan High season). Therefore obtaining information on total landings from the buyers has been set a target of 100 landings as a maximum value. At sites where landings are not high, every effort will be made to get as many landings/buyers data as possible up to a target of 100 landings.  
 3. One team of enumerators will cover the collection of buyers data from up to a maximum combined 200 PS and GN landings for Binh Dinh and Khanh Hoa and 200 for Phu Yen. The estimate proportion of PS and GN landings for buyers total landings data in each province has been included in the Table above and has been determined from 4. The target number of LL and PS/GN landings that are to be sampled from specific close communities is 200/1 month, according to enumeration activities to date and 5. Suggestions for how the enumerator teams should be allocated landing sites has been included in Table above, but it is left up to each sub-DECAFIREP office to decide how resources are to be allocated to best cover the work required.  
 6. If more landing/resources become available, then these levels or target coverage will be revised.

**Data collection results – Binh Dinh**

Month-year	Fishing port/ landing site	Fish. method	Σ Landing vessel	Biological data collection	Landing data collection	Logbook	
						Out	Return (trip)
10/2010	Tam Quan	LL	128	150	128	60	9
11/2010	Tam Quan	LL	46	10	35	40	30
12/2010	Tam Quan	LL	42	0	34	219	19
01/2011	Tam Quan	LL	296	30	169	82	209
02/2011	Tam Quan	LL	310	30	192	19	251
03/2011	Tam Quan	LL	256	30	150	5	184
04/2011	Tam Quan	LL	246	30	150	0	189
05/2011	Tam Quan	LL	252	30	150	0	162
09/2011	Tam Quan	LL	123	20	77	68	64
10/2011	Tam Quan	LL	77	18	55	56	51
	Σ		1776	248	1140	549	1168
09/2011	Quy Nhơn	PS	131	10	68		
10/2011	Quy Nhơn	PS	63	6	38		
	Σ		194	16	106		
09/2011	Tam Quan	GN	46	6	24		
10/2011	Tam Quan	GN	25	0	19		
	Σ		71	6	43		

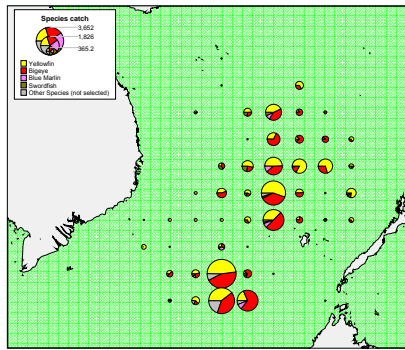
**Data collection results – Phu Yen**

Month, year	Landing sites	Fish. method	Arrival vessels	Collected samples			
				Biological data	Landing data	Logbooks Sent out	Logbooks Retrieve
7/2010	Ward 6	Longline	159	51	159	159	
7/2010	Phu Dong ward	Longline	120	67	120	120	
10/2010	Phu Dong ward	Longline	11	11	11	11	
10/2010	Ward 6	Longline	39	24	39	39	
11/2010	Ward 6	Longline	06	06	06	03	
12/2010	Ward 6	Longline	06	06	06	06	
1/2011	Ward 6	Longline	92	31	92	92	
2/2011	Phu Dong ward	Longline	73	30	37	73	
2/2011	Ward 6	Longline	69	31	38	69	
3/2011	Phu Dong ward	Longline	197	30	100		
3/2011	Ward 6	Longline	144	30	72		
4/2011	Ward 6	Longline	144	31	72		
9/2011	Phường Phú Đông	Longline	99	10	50		
9/2011	Ward 6	Longline	44	14	22		
10/2011	Phu Dong ward	Longline	34	10	17		
10/2011	Ward 6	Longline	36	10	18		

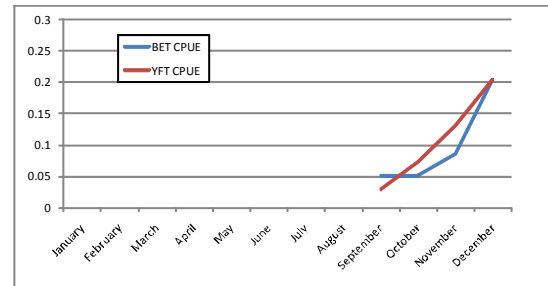
**Data collection results – Khanh Hoa**

Month	Fishing port	Arrival vessels	DATA COLLECTION			
			Biological samples	Landing samples	Logbook	
					Sent out	Return
9/2011	Hòn Rở	110	25	110		
	Đá Bạc	15	03	10		
10/2011	Hòn Rở	115	22	115		
	Đá Bạc	10	04	10		
11/2011	Hòn Rở	110	21	110		
	Đá Bạc	10	06	10		

Logsheet – LL Distribution of species catch



Logsheet – LL Monthly YFT and BET CPUE, 2010



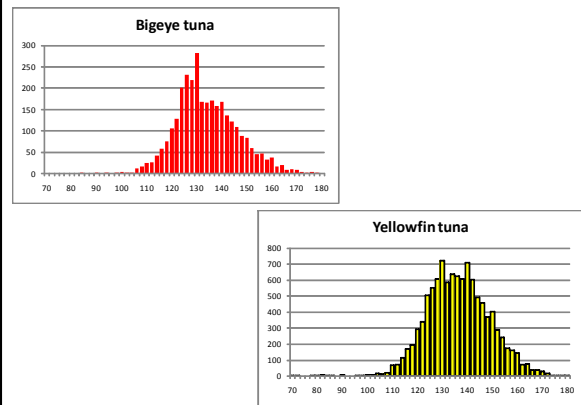
Logsheet – LL Species Composition

Catch Statistics for the longline fishery (All Species)  
for waters inside and outside the EEZ  
From 01 Jan 2010 to 31 Dec 2011  
LEGEND: MT - Metric tonna; CPUE - kg per 100 hooks; NPUE - Number per 100 hook

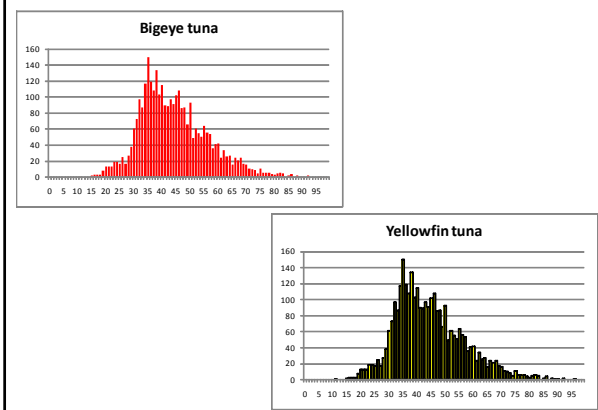
Note that coverage of logsheet data may not be 100%

		Vietnam (National Fleet)			
Period	Species Name	MT	CPUE	NPUE	AVG Wt
201	YELLOWFIN	14.357	2.9	0.1	33.9
	BIGEYE	13.606	2.7	0.1	44.9
	SHARKS (UNIDENTIFIED)	9.804	2.0	0.0	56.7
	OTHER FISH	5.339	1.1	0.1	9.1
	BLACK MARLIN	1.634	0.3	0.0	21.2
	MARLIN	1.305	0.3	0.0	20.7
	BLUE MARLIN	1.018	0.2	0.0	56.6
	SWORDFISH	0.996	0.2	0.0	49.3
	SAILFISH (INDO-PACIFIC)	0.050	0.0	0.0	50.0
201		48.1	0.0	0.0	

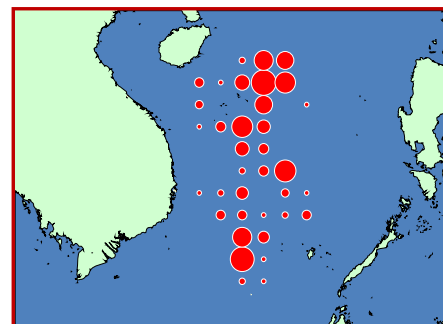
LL Annual YFT and BET length composition



LL Annual YFT and BET weight composition



Observer – LL Distribution of effort

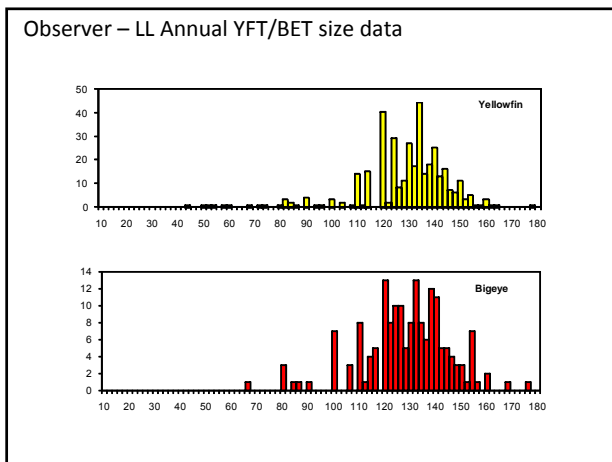


### Observer – LL Species composition

Species	No.	Catch details			Fat		Condition		Sex			
		Ar	Wt	No./km	Free	Adip	Saline	Meat	Male	Female		
YELLOWFIN	302	27.12	39	129.3	1.26	59.42	1	-	55	15	-	-
OTHER FISH	182	16.94	3	89.7	0.82	31.59	1	-	65	13	-	-
LONGSHOUTED LANCETFIN	160	14.93	1	90.0	0.72	20.49	0	-	21	19	-	-
BIGEYE	139	12.93	46	123.0	0.62	20.49	0	-	26	16	-	-
MAHI MAHI / DOLPHINFISH / DORA	68	6.04	3	78.1	0.30	21.63	0	-	51	2	-	-
WAMU	40	3.88	9	109.2	0.18	14.79	0	-	30	28	-	-
SHAKE HAKE	36	2.28	6	81.5	0.16	7.89	0	-	8	11	-	-
ESCOLAR	25	2.28	7	68.1	0.11	9.94	0	-	68	4	-	-
OLLIFISH	24	2.18	2	87.7	0.10	8.94	0	-	29	28	-	-
SWORDFISH	22	2.08	33	100.4	0.10	9.94	0	-	26	35	-	-
SHARK - STINGRAY - MANTA SHI	22	1.94	1	39.2	0.09	6.84	0	-	35	5	-	-
BLUE MULLIN	14	1.28	68	189.4	0.06	6.49	0	-	28	-	-	-
REEF SHARK	14	1.28	40	176.0	0.06	6.49	0	-	43	14	-	-
MORULA (A.K.A. DEVIL RAY)	14	1.28	129	77.5	0.06	6.49	0	-	29	-	-	-
SHARK (UNIDENTIFIED)	11	0.94	45	147.0	0.04	2.49	0	-	26	18	-	-
GREY BARRACUDA	8	0.74	3	49.1	0.03	2.49	0	-	50	13	-	-
SALPINE (INDO-PACIFIC)	8	0.74	17	185.0	0.03	2.94	0	-	50	25	-	-
ALBACORE	7	0.68	20	102.0	0.03	1.94	14	-	16	14	-	-
BLACK MULLIN	6	0.58	55	182.1	0.02	2.94	0	-	33	67	-	-
TUNA (UNIDENTIFIED)	5	0.48	18	98.0	0.02	1.49	0	-	-	20	-	-
HAWAIIAN MONITOR FISH (UNIDENTIFIED)	3	0.28	-	46.0	0.01	1.49	0	-	100	-	-	-
HELLGRUBBER	3	0.28	8	189.3	0.01	1.49	0	-	100	-	-	-
BARRACUDA (UNIDENTIFIED)	1	0.08	7	99.0	0.00	0.49	0	-	100	-	-	-
SHARK (UNIDENTIFIED)	1	0.08	1	21.0	0.00	0.49	0	-	100	-	-	-

### Observer – LL Species composition

Species	No.	Catch details			Fat		Condition		Sex			
		Ar	Wt	No./km	Free	Adip	Saline	Meat	Male	Female		
OTHER	508	58.49	2	89.1	2.27	87.94	0	-	45	11	-	-
PACIFIC TUNA	448	40.18	41	322.5	2.81	78.38	1	-	56	33	-	-
SHARK	64	5.74	60	103.2	0.28	21.13	0	-	55	8	-	-
BILLFISH	31	4.39	43	134.2	0.22	20.19	0	-	33	27	-	-
OTHER SCORPENOIDS	48	4.04	10	237.4	0.20	24.23	0	-	27	22	-	-
HAWAIIAN MONITOR FISH	2	0.28	-	46.0	0.01	1.49	0	-	100	-	-	-



- ### Typical problems in data collection
- Sampling problems...
    - Measuring equipment not calibrated (non-standard measurements)
    - Use of inadequate instruments (e.g. tape measures)
    - Species identification problems
    - Sampling non-random landings – samplers not aware!
    - Not sampling the entire catch or not accounting for entire catch on data forms... (required for LL sampling)
    - Missing/erroneous information on data collection forms
  - Problems with compliance (non- and under-reporting)...
    - Problems in catches identified when cross-checking with other types of data
    - Misreported positions (when cross-checking with VMS data)
    - Main tuna species catches only recorded (LL - need other species)

### Vietnam data – WPEA Audit required

Under the WPEA project, an annual audit of data is required

**PURPOSE**

- To identify problems in data collection and/or protocols
- Focus on where more training is required
- Ensure data are usable by national and WCPFC Scientists

**WHEN ...**

- As soon as 2011 data have been entered into TUFMAN
- Target -- March 2012 (before WCPFC data submission)

### Vietnam data – WPEA Audit required


Under the WPEA project, an annual audit of data is required

**WHAT will be audited ...**

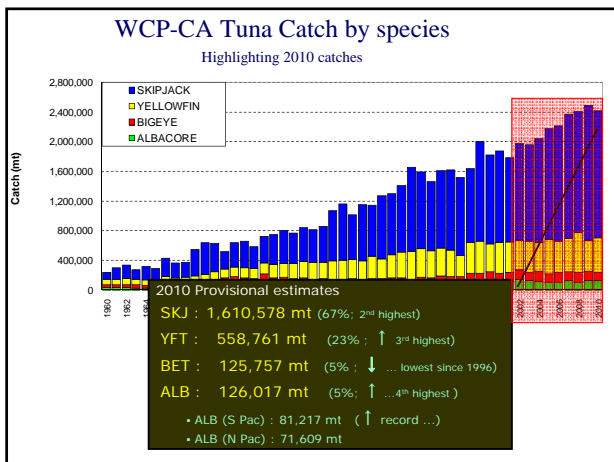
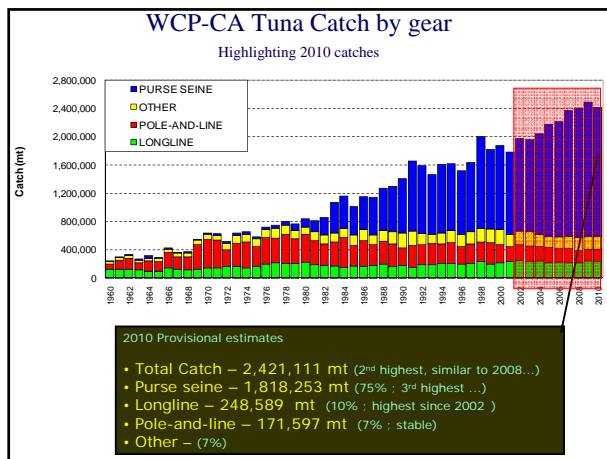
- Logsheet and Observer data
- Positional information is correct...
- Size data is consistent and no irregularities...
- Species composition is consistent with gear type, etc.
- Catch volume is consistent with gear type, etc.

**National Training on Improvement of Data Collection for Tuna Gillnet and Purse Seine Fisheries in Vietnam**  
 Binh Dinh, 27 – 29 February 2012

**Recent WCPFC fisheries trends and data provision obligations of member countries to WCPFC**

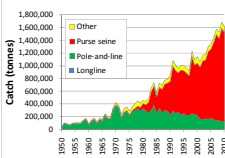
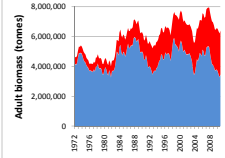


Department of Capture Fisheries and Resources Protection (DECAFIREP)  
 Directorate of Fisheries (D-FISH)



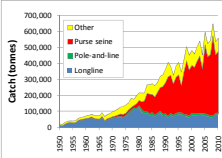
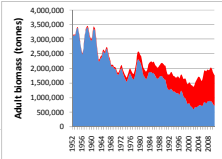
## Skipjack

- Catch continues to increase
- Approximately 1.6 million tonnes in 2010, dominated by purse seine
- Pole-and-line continues to decline
- Stock decreasing slowly – now about 50% depletion from unexploited level
- Outlook: stock falling to near MSY level, 25% of unexploited level

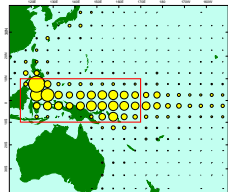
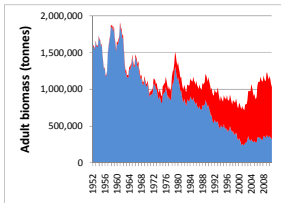
## Yellowfin

- Catch increased in 2008 after period of stability
- But have not seen the same growth as skipjack
- Full exploitation potential of yellowfin has been reached
- Stock has decreased steadily
- Now approaching 60% depletion from unexploited level

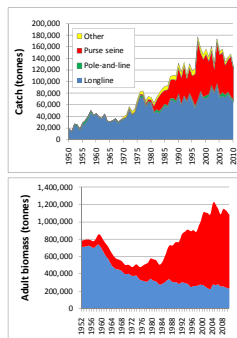
## Yellowfin

- But, higher depletion (70%) in western equatorial zone where 90% of

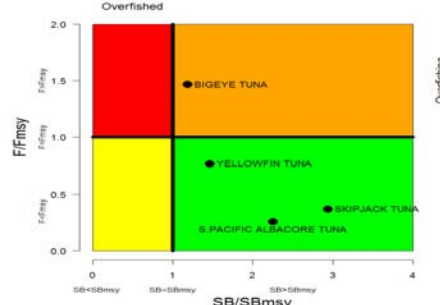



### Bigeye

- Catch has levelled out over past 10 years
- Mainly longline catch of adults
- Recent increase in purse seine catch with FAD introduction
- Biomass has declined steadily
- Very high level of depletion, approaching 80%



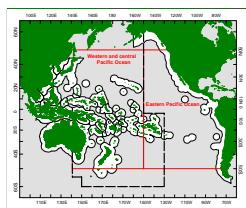
### Stock Status Overview “Kobe Plot”



### Data obligations to the WCPFC

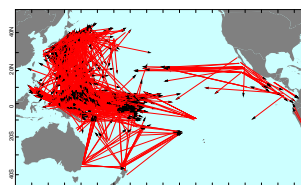
In order to conduct the scientific work necessary to ensure the conservation and management of the target tuna species throughout their stock boundaries ... (essentially the entire Convention Area and beyond) ...

WCPFC member countries agreed that a set of fishery data must be provided on an annual basis to conduct the regional stock assessments, which would provide advice to the WCPFC member countries to manage their stocks .....



### Why collect data ?

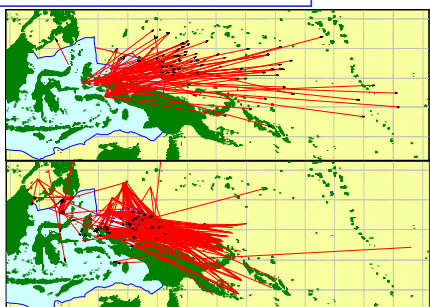
Tuna don't recognise man-made boundaries – they are “highly migratory” species - so stock assessment and management must be done on a regional, and sometimes ocean-wide, basis



Long-distance (>1,000 nmi) movements of tagged skipjack.

### Why collect data ?

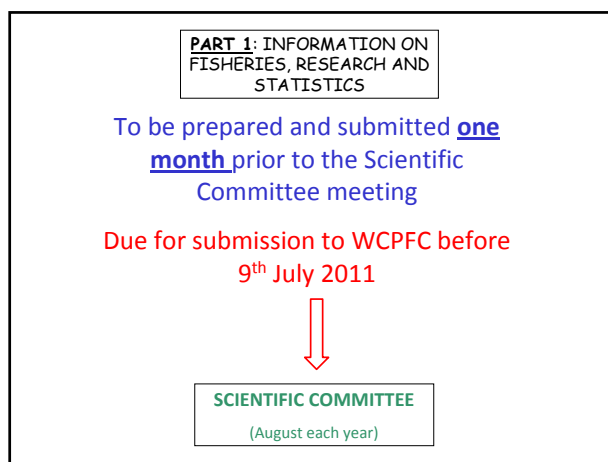
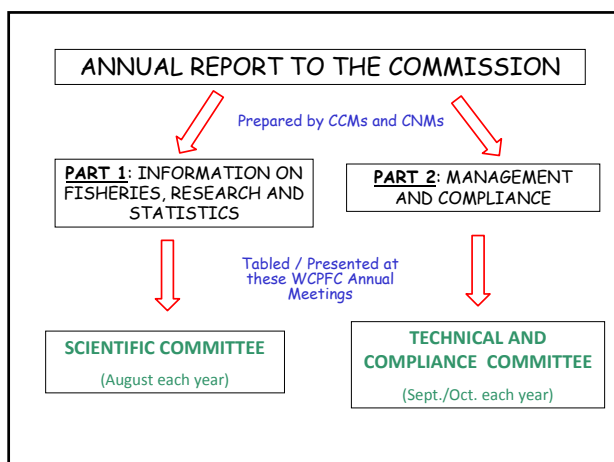
Tuna don't recognise man-made boundaries – they are “highly migratory” species - so stock assessment and management must be done on a regional, and sometimes ocean-wide, basis



### ANNUAL REPORT TO THE COMMISSION

**Purpose:** To provide relevant information to the Commission on fishing activities of CCMs and cooperating non-CCMs, including management and compliance issues.

The report should include all fishing activities for highly migratory species being undertaken within the Convention Area as required by the Convention and decisions by the Commission.



**ANNUAL REPORT TO THE COMMISSION**

**PART 1: INFORMATION ON FISHERIES, RESEARCH AND STATISTICS**

**GUIDELINES**

Latest version was produced as "ATTACHMENT N" in the SC4 Report (August 2008)  
<http://www.wcpfc.int/pdf/Annual%20report%20-%20part%20-%20Information%20on%20fisheries%20research%20and%20statistics.pdf>

**OBLIGATIONS**

**Part 1 of the Annual Report is due one-month prior to the annual regular session of the Scientific Committee.**

**Part 1 of the Annual Report shall include the following, completed box at the front of the report.**

Scientific data was provided to the Commission in accordance with the decision relating to the provision of scientific data to the Commission by 30 April 2xxx	[answer YES or NO]
If no, please indicate the reason(s) and intended actions:	

**ANNUAL REPORT TO THE COMMISSION**

**PART 1: INFORMATION ON FISHERIES, RESEARCH AND STATISTICS**

**ANNUAL FISHERIES INFORMATION**

**Essential information**

I	Annual catch and effort by primary species and gear in the WCPFC Convention Area	Previous calendar year (x-1) and previous 4 years (x-2 to x-5)
II	Number of vessels by gear type and size (fleet structure)	Previous calendar year (x-1) and previous 4 years (x-2 to x-5)
III	Fishing patterns (catch by time/area)	Previous year; comparisons with earlier years
IV	Estimated total catches of non-target, associated and dependent species (if available)	Previous calendar year; other years if available

**ANNUAL REPORT TO THE COMMISSION**

**PART 1: INFORMATION ON FISHERIES, RESEARCH AND STATISTICS**

**ANNUAL FISHERIES INFORMATION**

**Useful information**

V	Developments/trends in the fishery (changes in fishing patterns, fleet operations, target species, level of transshipment, etc.)
VI	Associated socioeconomic factors (which may influence or explain the above trends)
VII	Disposal of catch (fresh/frozen/other)/market destination (export/domestic)
VIII	Onshore developments (processing plants, support facilities, etc.)
IX	Future prospects of the fishery (long term viability, expansion/contraction, etc.)

**RESEARCH AND STATISTICS**

X	Summary of observer and port sampling programmes (scientific data)
XI	Research activities (tunas, other species, species of special interest, oceanographic influences, etc.)
XII	Statistical data collection systems in use (describe)
XIII	Data coverage of catch, effort and size data for all species

**ANNUAL REPORT TO THE COMMISSION**

**PART 1: INFORMATION ON FISHERIES, RESEARCH AND STATISTICS**

Annex 1. Suggested layout for PART 1 of the Annual Report to the Commission

Section	Sections in Annual Report
1*	ABSTRACT/SUMMARY
2*	Tabular Annual Fisheries Information
3	Background
4*	Flag State Reporting
5	Coastal State Reporting
6	Socio-economic factors
7	Disposal of catch
8	Onshore developments
9	Future Prospects of the fishery
10	Status of tuna fishery data collection systems
11	Research activities covering target and non-target species

## ANNUAL REPORT TO THE COMMISSION

## PART 1: INFORMATION ON FISHERIES, RESEARCH AND STATISTICS

## Essential Tabular Information for your National Fleet

## Suggested Table / Figure caption

Table 1.	Annual catch and effort estimates for the [National fleet], by gear and primary species, for the WCPFC Convention Area and [other broad ocean area], for years [x-5] to [x-1].
Figure 1	Historical annual catch for the [National fleet], by gear and primary species, for the WCPFC Convention Area presented as a line graph.
Figure 2	Historical annual vessel numbers for the [National fleet], by gear for the WCPFC Convention Area presented as a line graph.
Table 2.	Number of [National fleet] vessels, by gear and size category, active in the WCPFC Convention Area, for years [x-5] to [x-1].
Figure 3	Annual distribution of target species catch and effort by the [National fleet] active in the WCPFC Convention Area, for years [x-5] to [x-1].
Table 3.	Observed annual estimated catches of species of special interest (seabird, turtle and marine mammals) by gear for the [National fleet], in the WCPFC Convention Area, for years [x-5] to [x-1] to the extent available.
Table 4.	Annual estimated catches of non-target, associated and dependent species, including sharks, by the [National fleet], by gear and species, in the WCPFC Convention Area, for years [x-5] to [x-1] to the extent available.
Table 5.	Estimated annual coverage of operational catch/ effort, port sampling and observer data for the [National fleet], by gear, active in the WCPFC Convention Area, by gear, for years [x-5] to [x-1].

Table 1. Annual catch and effort estimates for the [National fleet], by gear and primary species, for the WCPFC Convention Area and [other broad ocean area], for years [x-5] to [x-1].

This table should have been produced previously (according to the template provided) when you prepared your annual catch estimates to be provided by April 30<sup>th</sup> – if so, then you can merely cut-and-paste this table. (Effort not yet included but will be covered in next year's version of the template).

The annual estimates should also be available in the [WCPFC Tuna Fishery Yearbook](#) (unless the estimates for previous years have been modified recently).

Note that the species to be included are specified in the guidelines for the provision of scientific data to the WCPFC (annual catch estimates). The species should include at the very least - Skipjack, Yellowfin, Bigeye, Albacore and Pacific Bluefin Tuna, Striped, Black and Blue Marlin and Swordfish.

The sources of the estimates themselves for the most recent year can be obtained from the following database reports, depending on which types of data are more reliable.

- TUFMAN WCPFC Reporting Module – Table #1
- TUFMAN Catch and Report - # 1 (LOGSHEETS, adjusted with UNLOADINGS)
- TUFMAN Catch and Report - # 4 (UNLOADINGS)
- TUFMAN Catch and Report - # 11 (Combination of LOGSHEETS and UNLOADINGS)
- TUFMAN Catch and Report - # 12 (LOGSHEETS, adjusted with UNLOADINGS)
- CES (LOGSHEETS) – specific query to retrieve Annual catch and effort estimates for your national fleet

Table x. Annual catch (mt) in the **WCPFC Convention Area** by species for the PAPUA NEW GUINEA LONGLINE fishery.

Gear	LONGLINE				
Fleet	PNG locally-based vessels				
Species	2004	2005	2006	2007	2008
YELLOWFIN	2318	1222	2139	1539	2259
BIGEYE	399	237	216	111	201
BLUE MARLIN	113	144	95	109	98
BLACK MARLIN	23	53	41	36	16
SKIPJACK	1	0	0	0	0
ALBACORE	1681	2256	1811	1598	464
PACIFIC BLUEFIN	0	0	0	0	0
STRIPED MARLIN	14	11	15	18	4
SWORDFISH	73	98	80	81	80

## Notes

- These catch estimates also apply to the following areas
  - The WCPFC Area (the Pacific Ocean west of 150°W)
  - The WCPFC Convention Area south of the equator
  - The WCPFC Area south of the equator
- The PAPUA NEW GUINEA longline fleet does not fish in any other areas for which catch estimates are required by the WCPFC.
- Catch estimates were determined from logsheet data raised using information on actual vessel activity (e.g. visits to land catch and VMS data).

## ANNUAL REPORT TO THE COMMISSION

## PART 1: INFORMATION ON FISHERIES, RESEARCH AND STATISTICS

## Essential Tabular Information for your National Fleet



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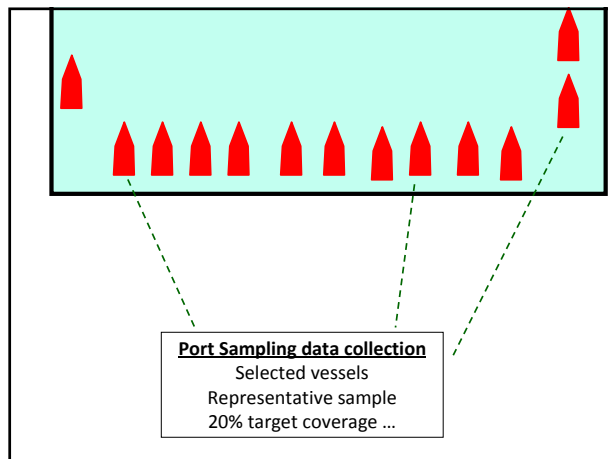
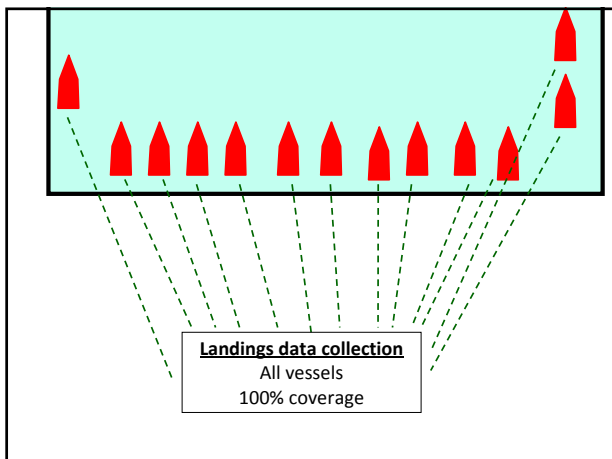
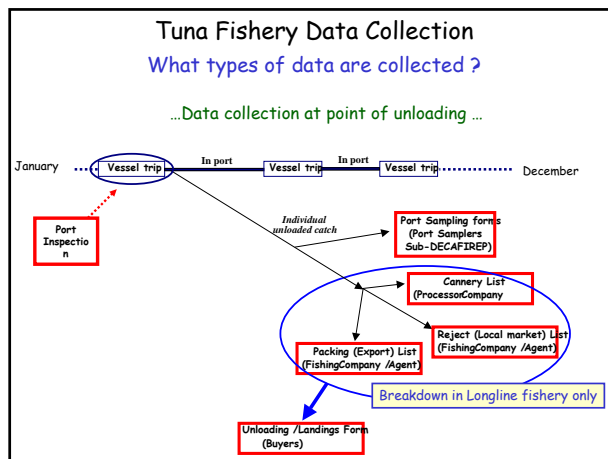


TUNA FISHERIES DATA WORKSHOP  
15-17 March 2010  
Hai Phong, Viet Nam

Port Sampling data collection  
in WCPO fisheries

West Pacific East Asia Oceanic Fisheries Management (WPEA OFM)  
Administered by the Western and Central Pacific Fisheries Commission (WCPC)



### Tuna Fishery Data Collection

Port Sampling data

**Recorded by** : Trained Fisheries staff  
(Port samplers, enumerators)

**Unit of collection** : Data collected represent total catch by species for a Vessel trip

**Coverage required** : 20% (recommended target coverage...)

**Latest form version** : DCC 2007

### Tuna Fishery Data Collection

Port Sampling data

Main characteristics

- Offers a convenient, cost effective method to obtain considerable quantities of species and size composition data (lengths of individual fish) for stock assessment work and in the determination of certain Annual catch estimates (e.g. purse-seine bigeye catch)
- Provides an independent verification of the data submitted by the fishing company (i.e. logsheets and unloadings data)
- Only partial coverage of landings is required (Target 20% - randomly-selected unloadings/landings)
- For LONGLINE, the entire tuna catch from a selected landing must be sampled
- For PURSE SEINE and GILLNET, a representative, unbiased sample must be taken from a selected landing



Tuna Fishery Data Collection

Port Sampling data

Vietnam tuna fisheries - Discussion points...

- Design of the data collection form (which forms should it be based on...
- Target coverage [by GEAR] ?
- Protocols to be used [by GEAR] ?
- How many landing sites to cover [by GEAR] ?
- Overall strategy for implementation ... (longline easier to implement)
- Training ?
- Potential problems in each Province ?



### Tuna Fishery Data Collection, Logsheet data

#### DCC Purse-seine Logsheet

### Tuna Fishery Data Collection

#### Logsheet data

#### WCPFC requirements

LOGSHEET TRIP HEADER	Vietnam forms			Notes
	LL	PS	GN	
Name of the vessel	YES	YES	YES	
Country of registration	(NO)	(NO)	(NO)	This field not provided on the logsheet, but is available on the Vietnam vessel register.
Registration number	(NO)	(NO)	(NO)	This field not provided on the logsheet, but is available on the Vietnam vessel register.
International radio call sign	(NO)	(NO)	(NO)	This field not provided on the logsheet, but is available on the Vietnam vessel register.
Port of departure	NO	NO	NO	
Date of departure	YES	YES	YES	
Port of unloading	NO	NO	NO	
Date of arrival in port of unloading	YES	YES	YES	
Mesh size	N/A	NO	NO	Not required for the WCPFC but important for species target in PS and GN
Net length and depth	N/A	NO	NO	Not required for the WCPFC but important for PS and GN
Target species	NO	NO	NO	Not required for the WCPFC but useful for all gear types to determine what is being targeted.

### Tuna Fishery Data Collection

#### Logsheet data

#### WCPFC requirements

LOGSHEET SET and DAILY DETAILS	Vietnam forms			Notes
	LL	PS	GN	
Activity	NO	NO	NO	Activity codes relevant to each gear type is a strong requirement
Date of start of set or Date if no fishing on that day	YES	YES	YES	
Time of start of set	YES	YES	YES	
Position of start of set	YES	YES	YES	Position should be to nearest thousandths of minute (PS) and nearest minute (LL)
Number of hooks per set	NO	N/A	N/A	This field is recorded at the TRIP level, but may change from set to set.
Number of branch lines between floats	NO	N/A	N/A	
School association	N/A	NO	N/A	Species school association by set is required for purse seine
Number of fish caught per set	NO	N/A	N/A	Number of fish caught per species per set is a strong requirement for LONGLINE
Total weight or average weight of fish caught per set, by species	YES	YES	YES	The species have not been indicated on the form but there is provision to enter the species. <b>It would be better to indicate the species required for each gear type on the form.</b>

- ### Tuna Fishery Data Collection
- #### Logsheet data
- #### Data fields collected
- Trip-level information
    - Vessel details (name and other identifying attributes)
    - Trip departure and return details (dates and ports)
    - Permit/License information (where relevant)
    - Other trip-related information (e.g. LL target species, etc.)
  - Daily or fishing operation-level information
    - Date, Position, Activity
    - Effort information - Tuna school type (PS), set time, hooks used (LL) ...
    - Catch by species
      - LONGLINE
        - Number and weight estimate
        - Tuna, billfish and shark, but other species of interest also
        - Indication of DISCARDS
      - PURSE SEINE
        - Weight estimate
        - Usually only tuna species catches
        - Indication of DISCARDS
    - Name of Captain and signature

- ### Tuna Fishery Data Collection
- #### Logsheet data
- #### Data Collection System/Protocols
- Necessary legislation or agreement established describing obligation to collect data
  - Fishing Companies are aware of the importance/usefulness of these data
  - Instructions provided with data collection forms (how to fill out form)
  - Training (if required, ensures instructions are adhered to)
  - Establish Contact points
    - who are the fishing company/vessel contacts and receivers of data
  - Establish SCHEDULE for provision of data
    - Monthly, quarterly, etc. ?
  - Establish Data quality control procedures
    - Regular review/audit of data (by receiver)
    - Review meetings (provide feedback on problems)
    - Determine if coverage is complete ...

- ### Tuna Fishery Data Collection
- #### Logsheet data
- #### Typical problems in data collection
- Requirement (e.g. legislation) to collect information does not exist
  - Awareness - fishing companies/vessel captains not aware of importance/obligations
  - Obtaining 100% coverage ...
    - System should cater for collection of logsheets from all trips...
    - Use other types of data collection to determine where fishing has taken place - so you know to expect a logsheet !
  - Compliance (non- and under-reporting)...
    - Problems in catches identified when cross-checking with other types of data
    - Misreported positions (when cross-checking with VMS data)
    - Main tuna species catches only recorded (LL - need other species)
- Need for ongoing liaison and audits/review of logsheet data collection system

Tuna Fishery Data Collection  
Logsheets data

Vietnam tuna fisheries - Discussion points...

- Review of current Vietnam logbook form against WCPFC requirements...
- How many vessels and landing sites to cover [by GEAR] ?
- Which gears should be covered ?
- Who collects the Logbooks ?
- Strategy for implementation ...
- Potential problems in each Province ?



**WEST PACIFIC EAST ASIA PROJECT  
PORT SAMPLING FORM - PURSE SEINE / GILLNET**

LANDING SITE	DATE	
VESSEL	CARRIER ?	CATCHER VESSEL GEAR
FISHING AREA	TOTAL CATCH (KGS)	

PAGE	OF
------	----

**SMALL CATCHES OF KEY SPECIES (Estimated Total catch)**

	YFT (MED/LRG)	BET (MED/LRG)		FGT/BLT	MAHI MAHI		RAY	WAHOO		BLM	BUM		MLS	SWO		SFA	SWO		KAW	SHK	OTHERS
No.																					
Kgs																					
Est?																					

No.	SPECIES	LENGTH	No.	SPECIES	LENGTH	No.	SPECIES	LENGTH	No.	SPECIES	LENGTH	No.	SPECIES	LENGTH	No.	SPECIES	LENGTH	No.	SPECIES	LENGTH	LENGTH	
1			16			31			46			61			76			91				
2			17			32			47			62			77			92				
3			18			33			48			63			78			93				
4			19			34			49			64			79			94				
5			20			35			50			65			80			95				
6			21			36			51			66			81			96				
7			22			37			52			67			82			97				
8			23			38			53			68			83			98				
9			24			39			54			69			84			99				
10			25			40			55			70			85			100				
11			26			41			56			71			86			101				
12			27			42			57			72			87			102				
13			28			43			58			73			88			103				
14			29			44			59			74			89			104				
15			30			45			60			75			90			105				





ACTIVITIES PHOTO



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SOUTHEAST ASIAN FISHERIES DEVELOPMENT CENTER  
TRAINING DEPARTMENT