

REPORT OF THE REGIONAL TRAINING COURSE ON MONITORING TUNA CATCH DATA AT TUNA CANNERY



TD/RP/175

3 to 6 July 2012, Nha Trang, Vietnam



Training Department

Southeast Asian Fisheries Development Center

**Report of the Regional Training Course on
Monitoring Tuna Catch Data at Tuna Cannery**

3-6 July 2012, Nha Trang, Vietnam

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PREPARATION AND DISTRIBUTION OF THIS DOCUMENT

Report of the Regional Training Course on Monitoring Tuna Catch Data at Tuna Cannery, Nha Trang, Vietnam, 3 to 6 July 2012 was prepared by the Training Department to disseminate to participants of the Training Course, SEAFDEC Member Countries, SEAFDEC Departments and concerned institutions.

BIBLIOGRAPHIC CITATION

TD/RP/175. SEAFDEC. 2013. Report of the Regional Training Course on Monitoring Tuna Catch Data at Tuna Cannery, Nha Trang, Vietnam, 3 to 6 July 2012.

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Table of Contents

	Paragraph
I. Summary	1 to 3
II. Proceedings of the training	4 to 45
a) Opening of the training	4 to 8
b) Organization of the training	9 to 11
c) The objectives of the work session	12 to 13
d) The training session	14 to 45
III. Recommendations of the training and follow-up activities	46 to 50
IV. Closing of the training	51 to 52

Annexes:

1. List of resource persons and participants
2. Agenda
3. Welcome and opening speeches
4. List of documents
5. Closing speech

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I. Summary

1. The objective of the training was to enhance the tuna species identification skills of the concerned fishery officials of the SEAFDEC Member Countries. A total of ten trainees from Indonesia (2), Malaysia (2), Thailand (2), and Vietnam (4) participated in the training (Annex 1). The cannery of Quang Minh Joint Stock Company in Nha Trang, Vietnam was used as the venue. The sampling method and the species identification manuals provided by the Western and Central Pacific Fisheries Commission (WCPFC) and the Japanese Research Institute were largely used in the training.

2. The samples of tuna that comprised both Yellowfin and Bigeye tunas, 1-3 kg in body weight, were drawn from the cannery. In carrying out the practical work, the trainees were working independently from the resource persons, and the results of their species identification were subsequently verified. For the size class of 1-2 kg, the resource persons identified the Bigeye tuna composition to be 59.9%, and for the size class 2-3 kg to be 66.1%; while the Yellowfin tuna compositions were reported as 35.8% and 16.5% for both the size classes respectively. On average, the conformity of the trainees' species identification ranged from 50.0% to 86.3% for both the size classes respectively.

3. The difficulties and complexities of the issue of tuna species identification that were discussed at the training made it possible to identify some key issues that may be further pursued by both SEAFDEC and its Member Countries. These are: (i) post-training practice should be monitored to identify further SEAFDEC technical support to the relevant national activities; (ii) a similar training course should be held at a regional level; and (iii) an e-learning course on tuna species identification should be implemented at the regional level.

II. Proceedings of the Training

a) Opening of the Training

4. Back in 2010, SEAFDEC/TD, in collaboration with Japan's National Research Institute of Far Seas Fisheries (NRIFSF) and Fisheries Research Agency (FRA), undertook to verify the accuracy of species identification of juvenile Yellowfin and Bigeye tunas in three canneries in Thailand. It was found that not only the canneries had difficult time in sorting out the two species, the market statistics/reports also faced with great uncertainty in reporting the nominal catch. This verification in Thailand showed a high mixture rate of juvenile Bigeye tuna in the canneries' raw materials that had been identified as Yellowfin. The mixture rate was somewhat lower in the bigger size of Yellowfin samples.

5. Dr. Worawit Wanchana, SEAFDEC/TD Head of the Capture Fishery Technology Division welcomed the resource persons and participants to the training. He outlined the forthcoming training activities as appears in Annex 2. To help improve sustainable management of tuna fisheries, the importance of reliable reports from canneries was said to be an important attribute, to which this training could contribute.

6. Ms. Nguyen Thi Hong Nhung, Chief of Fisheries Administration from Vietnam's Department of Science and Technology and International Cooperation, underscored the importance of improved tuna data collection in Southeast Asian Region especially Vietnam that has gain an increasing share in tuna catch from the Western and Central Pacific Ocean (WCOP). She acknowledged with gratitude the support to various capacity building programs and activities that SEAFDEC has rendered especially to improved data and information collection on tuna fisheries. Her welcome speech appears as Annex 3.1

7. At the inaugurating session, the SEAFDEC representative Mr. Tadahiro Kawata accentuated the importance of tuna fisheries that many countries in Southeast Asia have benefitted both in terms of domestic consumption and export. Globally, the proportion of tuna products from Southeast Asia has been growing, and it currently makes up to 40% of the world production. Despite the bright scenario, much is left to be done to manage the regional tuna fisheries in responsible manners to ensure healthy tuna fish stocks and environmental sustainability.

8. According to Mr. Kawata, the Japanese Trust Fund has committed to supporting the SEAFDEC programs for five years from 2008. He pinned a strong hope on the greater reliability of tuna nominal catch statistics gathered from key canneries in the region, and efficient fisheries policies and measures, both at the national and regional levels. His opening remarks appear as Annex 3.2.

b) Organization of the Training

9. This 4-day training session was held from 3 July 2012 in the Vietnam's province of Nha Trang.

10. The agenda of the training is as follows:

- Opening and introduction
- Country report on tuna industries and situation of tuna IUU-fishing
- Accuracy of species identification of Yellowfin and Bigeye tunas in three canneries of Thailand
- Sampling techniques at cannery and important characteristic to identify Yellowfin and Bigeye tunas in brine frozen condition
- Brief activity at the tuna cannery
- Practice on accuracy of species identification and sampling techniques at Quang Minh Joint Stock Company
- Presentation of the results from the practice at the tuna cannery
- Discussion on possibility to conduct study on accuracy of species identification of tuna in canneries of their respective countries
- Closing

c) The objectives of the training and key outputs

11. The objectives of the training are to:

- Enhance national capacity for improvement of tuna catch data
- Enhance capacity for examining accuracy of tuna identification at tuna canneries

12. Key outputs of the training include:
- Capacity on tuna species identification of fisheries officials of the member countries enhanced
 - Method for monitoring accuracy of tuna species identification at tuna canneries documented and disseminated
 - Activity plan to study accuracy of species identification of tuna canneries of the participating countries drafted
 - Information on tuna industry and situation of tuna IUU-fishing obtained.

d) Training session

Country reports on tuna industries and situation of tuna IUU-fishing in their respective countries

13. Representatives of Indonesia, Malaysia, Thailand, and Vietnam read their status reports on tuna industries and the current situation of tuna IUU-fishing.

Indonesia

14. The Indonesian representative Mr. Ade Wiguna read his paper *An Overview of Indonesian Tuna Industry* to the meeting. In 2010, Indonesia landed US\$383 million worth of tuna, approximately 11% of the world's tuna production, and 18% of the total fishery production of Indonesia. The major exporting tuna products included premium sashimi grade, frozen tuna (blocks, chunks, and loins), and canned tuna. The annual production for 2011 showed the highest landings from the North Sulawesi Sea (279,900 tonnes), followed by that from Jakarta (103,550 tonnes) and Bali (91,500 tonnes).

15. Albacore, Yellowfin, and Skipjack are the major tuna species that Indonesia exports mainly to Japan, European countries and the United States. In order to facilitate smooth tuna export, Indonesia proposed to the ASEAN Tuna Working Group during its meeting held 31 May to 2 June 2012 the followings:

- Eco-labeling for tuna products among ASEAN tuna producing countries
- Establishment of ASEAN Tuna Fisheries Center
- Sharing information among ASEAN Member States on tuna fisheries resources, statistics, trade, and national policy.

16. In sharing the information on combating IUU-fishing, Ms. Eva Suryaman read the paper *“Implementation of Catch Documentation Scheme”* to the meeting. In managing the regional tuna fisheries resources, Indonesia has played an active role as member of tuna Regional Fisheries Management Organizations, e.g. Indian Ocean Tuna Commission (IOTC) as full member since July 2007, Commission for the Conservation of Southern Bluefin Tuna (CCSBT as full member since April 2008), and Western and Central Pacific Tuna Fisheries Commission (WCPFC as contracting non-member since 2004). The activities that Indonesia has participated in combating tuna IUU fishing include:

- **CCSBT-CDS Program.** There are various reports and forms using for the CCSBT-CDS as follow:

- Reports
 - Total catch
 - Volume of export and locally sale
 - Number of remaining tags
 - List of vessels harvested Southern Blue Fin Tuna (SBT)
 - List of vessels and volume of SBT transshipment at the port (if any)
 - Catch monitoring
 - Re-export/export after landing of domestic product
 - Catch tagging
- Forms
 - Number of validated catch monitoring
 - Number of issued tags
 - Number of validated export after landing of domestic product
 - Farm stocking
 - Farm transfer

- **Implementation of IOTC Bigeye tuna statistical document (IOTC-BET) – Resolution 00/01: Mandatory Statistical Requirements**, which is a requirement for IOTC Member States, and for which cooperation of non-contracting parties is requested.

- **NOAA 370 Fisheries Certificate of Origin**. Since February 2009, this document scheme has been made applicable to all frozen and/or processed tuna products to be submitted by the importers within 10 days of the shipments' entry to the U.S. Customs and Border Protection.

17. In addition, Indonesia has also implemented activities as recommended by the **International Commission for the Conservation of Atlantic Tuna (ICCAT)—Swordfish Statistical Document Program** in (i) Report of the ICCAT Swordfish Statistical Document; and (ii) ICCAT Swordfish Re-export Certification.

18. At the national level, Indonesia has implemented SHTI (Sertifiket Hasil Tangkap Ikan) as Catch Certificate. The SHTI enforcement is applicable to all fishery products exporting to the EU.

Malaysia

19. The Malaysian representative, Mr. Mohd Mohta bin Mahamud, presented his paper "*Tuna Industries in Malaysia*" to the meeting. As a full member of IOTC, Malaysia has been entitled to exploitation of tuna fishery resources in the Indian Ocean since 1998. Malaysian tuna fishing is normally concentrated in the Strait of Malacca (mainly by purse seiners), and in the South China Sea (mostly in the areas 200+ m depth as referred to as the FAO Fishing Areas 61 and 71).

20. Malaysia's tuna fishing fleets can be seen in three size classes: (i) carrier vessels of 600 GRT and above (currently one such vessel is operating in the Indian Ocean); (ii) long-liners of <200 GRT (currently 9 such vessels are fishing in the Indian Ocean); and (iii) purse seiners of approximately 70 GRT (currently 518 such vessels are fishing in the South China Sea, and 378 of them in the Strait of Malacca). Neritic tunas are mainly caught by trawlers,

purse seiners, and gillnetters, and oceanic tuna is mainly caught by handline around fish aggregating devices. Long-line fishing mainly targets Yellowfin and Albacore tunas in the Indian Ocean.

21. The oceanic tuna catch by Malaysian fishing fleets in the Indian Ocean is normally landed at LKIM Batu Mauhg Port in Penang, and Semporna Port in Sabah State. Major ports for neritic tuna landing are in the States of Sabah/Labuan, Sarawak, Perlis, Perak, Kalimanta, Terengganu, and Pahang. Annual tuna landings in Malaysia was reported to be stable at around 600,000 tonnes during 2000 and 2010; more than half of this volume was landed in the East coast of Malaysia. Neritic tuna (largely Long-tail, Kawakawa, Skipjack) made up as much as 95% of this annual catch. The tuna catch in Malaysia is largely consumed domestically as fresh products, the demand for which is known to be on the increase. Imports of fresh and processed tuna from neighboring countries are therefore an apparent future option for Malaysia to meet its growing tuna demand.

22. Ms. Nor Azlin bintin Mokhtar from Malaysia read her paper “*Managing IUU-fishing in Malaysia*” to the meeting. The highlights:

Illegal Fishing

- Those conducted by national or foreign vessels in waters under jurisdiction of a State, without the permission of that State, or in contravene with its law and regulations;
- Those conducted by vessels flying the flag of States that are parties to a relevant regional fisheries management organization, but operate in contravention of the conservation and management measures adopted by that organization; or
- Those conducted in violation of national laws or international obligations, including those undertaken by cooperating States to a relevant regional fisheries management organization (RFMOs).

Unreported Fishing

- Fishing activities which have not been reported, or have been misreported to the relevant national authority, and in contravention of national laws and regulations; or
- Fishing activities undertaken in the area of competence of RFMO, which have not been reported, or have been misreported, and in contravention of the reporting procedures of that organization.

Unregulated Fishing

- Fishing activities in the area of application of a relevant RFMO, that are conducted by vessels without nationality, or by vessels flying the flag of a State not party to that organization, or by vessels in a manner that are not consistent with or contravenes the conservation and management measures of that organization; or
- Fishing activities in areas, or for fish stocks in relation to which there are no applicable conservation or management measures, and where such fishing activities are conducted in a manner inconsistent with State’s responsibilities for the conservation of living marine resources under international law.

23. According to Ms. Nor Azlin, Malaysia has been actively participating in meetings related to combating IUU-fishing, especially the meetings that were mainly organized by

IUU-fishing Regional Plan of Actions. Malaysia made a commitment in the “*Joint Ministerial Statement – Regional Ministerial Meeting on Promoting Responsible Fishing Practices including Combating IUU-fishing in the Region*” held in May 2007 in Bali, Republic of Indonesia under the “*Regional Plan of Action (RPOA) to Promote Responsible Fishing Practices including Combating IUU-fishing.*” In June 2011, Malaysia, along with all ASEAN Member Countries, made a commitment in the statement of “*Resolution and Plan of Action on Sustainable Fisheries for Food Security for the ASEAN Region Towards 2020*” which had been agreed to by ASEAN Ministers at the conference of “*the Ministerial and Senior Officials Meetings of the ASEAN-SEAFDEC Conference on Sustainable Fisheries for Food Security Towards 2020 “Fish for the People: Adaptation to a Changing Environment*” held in Bangkok, Thailand.

24. Ms. Nor Azlin further informed that Malaysia has implemented the following measures/tools in combating IUU-fishing:

- Vessels Inspection
- Fishing License
- Monitoring, Control, and Surveillance (MCS) Network;
- Landing of Vessels (LOV) record
- Vessels Monitoring System (VMS); and
- Catch Certification.

25. Drawing her conclusion, Ms. Nor Azlin recommended the following activities she deemed appropriate for implementation at the regional level:

- Regional observer program between neighboring countries to monitor tuna fishing operation;
- Comprehensive training course for relevant staff in data collection, analysis and reporting;
- Regional stock assessment survey on tuna resources in adjacent seas to be conducted under SEAFDEC leadership and relevant expertise mobilized from local universities and government agencies;
- Comprehensive and standardized data collection system;
- Full commitment and stronger coordination among relevant agencies;
- Data sharing on the list of IUU-fishing vessels with neighboring countries.

Thailand

26. Mr. Chirdsak Chookong of Thailand informed the meeting that Thai tuna purse seiners operate in West and East Indian Ocean throughout the year, especially along Somalia’s east coast. Major tuna species caught are Skipjack (60% by weight), Bigeye (20%), Yellowfin (15%), and Bonito (5%).

27. Known globally as a major producer and the largest exporter of canned tuna and tuna products, Thailand imports raw materials from Taiwan (25% by weight), USA (20%), Republic of Korea (13%), Republic of Vanuatu (13%), ASEAN countries (8%), and others (Japan, Marshall Island, EU, China, and Maldives approximately 21%). Data from 2007 to

2011 showed the following countries/regions that imported Thai tuna products (with percentage by value): USA (22%), EU (17%), Africa (17%), Middle East (11%), Australia, Japan and Canada (6% each), and others (South Africa, Tunisia, and EFTA approximately 15%).

28. Implementing the national IUU-fishing countermeasures, Thailand has implemented the catch certification scheme since January 2010 in line with the EU regulation. Under this countermeasure, all catches within the EEZ subject entirely to the catch certification scheme, while imported raw materials are required to be conducted under the re-export certificate along with the catch certificate issued by the country of origin.

Vietnam

29. Mr. Pham Viet Anh from Vietnam presented to the meeting an overview of tuna fisheries in Vietnam. Vietnamese tuna fishers largely employ longline, gillnet, and purse seine to fish for Yellowfin and Bigeye tunas, and gillnet and purse seine to fish for Skipjack. While gillnetters and purse seiners fish all year round, longliners fish seven months a year, normally from September, but some year from October.

30. The Vietnamese classification of fishing vessels comes in six categories according to the horsepower of their main engines: 20-49, 50-89, 90-149; 150-249, 250-400, and >400 HP. The latest statistics¹ put the total number of tuna fishing vessels at 7,232: 1,170 longliners, 5,229 gillnetters, and 833 daily purse seiners. The annual tuna catch showed an overall 47% increase for 2011 over that of 2000. Tuna exports in monetary terms also registered an increase by 160% over the period of five years from 2007 to date². The global market share of Vietnamese tuna products (fresh, frozen, and dried tuna) was 11.4%, and of processed tuna was 16.5%.

31. In Vietnam, the common problems arising between artisanal and commercial fishers on IUU-fishing have been in the areas of fishing zone demarcation enforcement, use of undersized mesh, and minimum size-limit in the catch. Based on the lessons learned and experiences from the WCPFC funded national tuna project, the following recommendations have been made:

National control:

- Strengthening of national laws and regional regulations;
- Establishing of a national tuna database that helps facilitate cooperation among relevant national authorities (e.g. DECAFIREP, VASEP) and exporters;
- Introducing immediately the national plan of action on tuna, and strengthening the national monitoring, control, and surveillance (MCS) program/activities. In this connection, DECAFIREP should formulate and implement MCS

¹ DECAFIREP (2011)

² VASEP (2012)

program/activities and its performance indicators to assist inspection activities and to deter infringements;

- Implementing VMS as a priority program, especially for tuna fishing vessels operating in offshore areas;
- Preparing and maintaining by DECAFIREP applicable MCS performance indicators for both inspection activities and infringements (including their corrective actions);
- Implementing the onboard observer program for longliners, and gillnetters (targeting 5% of total number of longliners by 2012).

Flag State Control:

- Each sub-DECAFIREP to ensure the effectiveness of the fishing licensing

Market State Control:

- Assuring compliance to catch certification instructions and other related measures by all tuna traders;
- Establishing buyer registration system at the sub-DECAFIREP level;
- Confiscating of fishing license from vessels caught unloading catch of undersize tunas.

Accuracy verification of species identification between Yellowfin and Bigeye tunas at three tuna canneries in Thailand

32. The NRIFSF resource person, Dr. Takayuki Matsumoto shared his experiences with the meeting on the 2010 tuna cannery survey that SEAFDEC/TD conducted in Thailand. Rapidly advancing since the early 1980s, Thailand's cannery production reached the volume of 480,000 tonnes in 2009. Annual tuna catches in the Thai waters were somewhere from 10,000 to 20,000 tonnes, and Skipjack, Yellowfin, Longtail tunas and Kawakawa were prevalent species. To meet the tuna cannery's demand, Thailand has imported annually some 120,000 to 150,000 tonnes of small tuna species (mainly Frigate tuna, Longtail tuna, and Kawakawa). Import of frozen tuna products, which moved in parallel with the amount of canned tuna exports over the time series, was as much as 810,000 tonnes in 2009. From the estimated tuna catch of over 3.4 million tonnes from the WCPFC and the Indian Ocean in 2008, as much as 20% of the catch was landed in Thailand.

33. The steps taken by SEAFDEC/TD in its 2010 tuna cannery survey are:

- Disaggregate the tuna samples into different weight groups:
 - <1.4 kg body weight
 - 1.4 – 1.7 kg
 - 1.8 – 3.3 kg
 - 3.4 – 9.0 kg
 - >9.0 kg
- Species identification of the tuna samples by:
 - Taking sample of 20 to 100 tails from each weigh group for identification;
 - Recording the weight and fork length (FL) of each sample;
 - Segregating the identification by species for each weight group;

- Comparing the result (in species composition) with the data reported by the Japanese vessels (market report)

34. The Itano and Fukofuka Handbook (2007) was used to guide the species identification. The key morphological characteristics described in the Handbook that sets the Yellowfin apart from the Bigeye tunas are as follows:

- Horizontal lines pattern on trunk and tail
 - slightly curved, spaced, and separated by rows of spots in case of the Yellowfin tuna (irregular page lines in case of Bigeye)
- Pectoral fin characteristics
 - Shorter and just reaching base of second dorsal fin
 - Longer and reaching second dorsal fin
- Body morphology
 - Elongate and long tail
 - Deep and round body

35. Where the external morphological characteristics became less distinguishable owing to the damage during the catch, handling or transportation, Polymerase chain reaction analysis—restriction fragment length polymorphism (PCR-RFLP) on flanking region (ATCO) between ATPase and cytochrome oxidize III genes from mtDNA—may be necessary to separate a juvenile Bigeye from the Yellowfin.

36. The accuracy verification that was attempted at three tuna canneries in Thailand ranged from 100.0 to 113.3% for Bigeye, and 98.0 – 100.0% for Yellowfin tunas. It was 98.7% for Bigeye and 105.1% for Yellowfin when compared to the export data to Japanese market. Dr. Matsumoto deduced that the market report of the Thai canneries is a reliable data source for the accuracy verification of tuna catch by species.

Sampling techniques at the tuna canneries

37. Dr. Hiroshi Ashida of NRIFSF-FRA, Japan talked about the “Sampling Techniques at Cannery and Important Characteristics to Identify Yellowfin (*Thunnus albacares*) and Bigeye (*Tunnus obesus*) in Brine Frozen Condition.” He suggested these techniques can be used for sampling both at fishing ports and at canneries. He described the sampling techniques, characteristics to identify Yellowfin and Bigeye tunas in the brine frozen condition, and data analysis.

38. With reference to the port survey carried out at Yaizu fishing port, situated on Suruka Bay in the central part of Shizuoka Prefecture, Japan where the breathtaking view of Mt. Fuji can be taken, Dr. Ashida informed that monthly sampling of tuna catches is taken from purse seiners that operate in the Western Central Pacific Ocean. The dates on which two to three samplings will be carried out are taken at random. For Yellowfin, samplings are drawn in the following weight groups: (i) < 1.4 kg body weight; (ii) 1.5 – 2.5 kg; (iii) 2.5 – 10.0 kg; (iv) >10.0 kg; and (v) *Kizu/Osare*³. For Bigeye tuna, the weight groups limit to (i) 2.5 – 10.0 kg; and (ii) >10.0 kg. According to Dr. Ashida, misreporting of Bigeye tuna landing is possible as no samples of <2.5 kg weight group is collected.

³ This applies to low quality catch owing to damages or improper preservation

39. Steps used in the port survey method at the Yaizu fishing port:

Step 1: Data of samples drawn from the catch unloaded to metal boxes will be collected by weight groups;

Step 2: 100 tails of fish in each weight group are lined up on the floor for sampling; and

Step 3: Data on fork length and body weight of both Yellowfin and Bigeye are taken by each weight group.

40. In species identification of the Yellowfin and Bigeye tunas, external characteristics⁴ will be initially examined by checking: (i) body morphology; (ii) head and eye morphology; and (iii) body marking, and pectoral fin. Since coloration is quickly faded away after death and brine preservation, it is not a useful characteristic for species identification, especially for frozen samples. Where external characteristics are doubtful owing to their damages or incompleteness, internal characteristics (e.g., liver morphology, swim bladder), and sampling of muscle for molecular analysis will become useful.

41. The calculation of species mixture rate between Yellowfin and Bigeye tunas is based on the weight of the two species from the landing data. To obtain species mixture rate, weight of Yellowfin and Bigeye tunas in each market or cannery for each weight group, the following formulae were given:

(a) Species mixture rate (SMR):

$$\text{SMR} = \text{BET (or YFT) in Kg.} / (\text{YFT} + \text{BET}) \times 100$$

(b) Estimating weight (or number) of YFT and BET in each market or cannery:

Weight (or number) of BET (or YFT) in each weight group for a market or cannery = total weight (or number) of the fish in the weight group x species mixture rate (%).

(Where SMR = Species mixture rate; BET = Bigeye tuna; and YFT = Yellowfin tuna)

Training at the tuna cannery

42. Preparing the workshop trainees for the exercise, Ms. Penchan of SEAFDEC gave the background information of the Quang Minh Joint Stock Company. Tunas supplied to this cannery are exclusively from local gillnetters and purse seiners who landed their catches at the Han Ro fishing port in Nha Trang City.

43. At the cannery, samples were drawn from the raw materials, 1 to 5 kg in size that consisted of frigate tuna (*Auxis thazard*), Skipjack, Yellowfin, and Bigeye tunas. Each group of participants was asked to segregate the samples into 1.0 -1.9 kg and 2.0-3.0 kg weight groups, and 30 fish in each group would be subjected to species identification. The results were presented to the meeting subsequently.

⁴ Itano (2005)

44. Verification by the resource persons of the samples of 1.0-1.9 kg and 2.0-3.0 kg size groups, drawn from the raw materials of the cannery showed the presence of Bigeye tuna at 59.9% and 66.1% respectively. For Yellowfin tuna, the presence was 35.8% and 16.5% for the two weight groups. Comparing the results of each group of trainees with that of the resource persons, the accuracy of Bigeye tuna identification was, on average, 71.9% and 50.0% for the two weight groups, while that of Yellowfin tuna was 68.4% and 86.4% respectively.

III. Recommendations of the training and follow-up activities

National Proposals

45. The following proposals and recommendations, as presented by the participants of each Member Countries after the practical training, are designed to assist SEAFDEC to help improve future tuna data collections from landing sites and canneries at the national level.

46. *Indonesia* proposed that future SEAFDEC training course should be conducted at the national level to train trainers on species identification of Yellowfin and Bigeye tunas. A 5-day of such training may be held in Jakarta and to be attended by government officials in the sectors of fishery resources on the high seas, fishery statistics, and fishing ports.

47. *Malaysia* perceived the future SEAFDEC assistance in three areas: a regional stock assessment survey on tuna resources in adjacent seas, regional training course on juvenile tuna species identification and data collection in a 5-year interval, and monitoring of tuna fishing activities through a regional observer program between neighboring countries. Fisheries officials, tuna exporters and tuna canning data collectors from Penang and Sabah should be included in future SEAFDEC training activities on species identification of juvenile tunas, data collection, and data management.

48. *Thailand* perceived the need for SEAFDEC support to the national study on species composition of tuna raw materials delivered to canneries in Samutsakorn province as being carried out by the Deep Sea Fishery Technological Research and Development Institute. The Institute currently conducts a monthly survey to disclose tuna species composition at these canneries.

49. *Vietnam* looked forward to SEAFDEC assistance in organizing a provincial training workshop on species identification of juvenile Yellowfin and Bigeye tunas in Vietnam. This workshop should help Vietnam build the capacity for port samplers and scientists to carry out species identification, especially of juvenile Bigeye and Yellowfin tunas from gillnetters and purse seiners with greater precision. It was mentioned that trainees should be drawn from local fisheries staff (in Bihn Dinh, Phu Yen, Khan Hoa, Ca Mau, Vung Tau, Quang Nam, and Quang Ngai provinces) and DECAFIREP fishery officials.

General Recommendations

- SEAFDEC should, as far as possible, put the training workshop proposals into action;
- SEAFDEC should accord greater importance of landing site survey in its future training; and

- SEAFDEC should develop an e-learning program on juvenile tuna species identification.

IV. Closing of the training

50. To close off the training workshop, Dr. Worawit Wanchana of SEAFDEC praised the resource persons and participants for their active participation and valued contributions that made the discussion very fruitful. He accentuated the facts that reliable data and timely reporting of tuna information depend heavily on the national enumerators and data processors who are key personnel in tuna fisheries statistics. He again welcomed the proposed follow-up activities at the national level, and reassured the participants that they will be seriously considered as key inputs to SEAFDEC's future program formulation.

51. Mr. Hidenao Watanabe, on behalf of the Japanese Trust Fund Project Manager of SEAFDEC, delivered his closing remarks (Annex 4). He expressed special thanks to the Department of Science and Technology and International Cooperation, and Nha Trang Coordinator for their cooperation and coordination to organize efficiently this training workshop. He also thanked the resource persons from the NRIFSF-FRA of Japan for their valued contributions to the training. He reassured the participants that SEAFDEC would seek any opportunity to identify appropriate program of activities to accommodate the recommendations and plan of activities that have been proposed at this training workshop.

List of Participants

Training Workshop on Monitoring Tuna Catch Data: at Tuna Cannery

3-6 July 2012, Nha Trang, Vietnam

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Agenda

- Opening and introduction
- Country report on tuna industries and situation of tuna IUU-fishing
- Accuracy of species identification of yellowfin and bigeye tunas in three canneries of Thailand
- Sampling techniques at cannery and important characteristic to identify yellowfin and bigeye tunas in brine frozen condition
- Brief activity at the tuna cannery
- Practice on accuracy of species identification and sampling techniques at Quang Minh Joint Stock Company
- Presentation of the results from the practice at the tuna cannery
- Discussion on possibility to conduct study on accuracy of species identification of tuna in canneries of the county
- Closing

Training Workshop on Monitoring Tuna Catch Data: at Tuna Cannery

3-6 July 2012, Nha Trang, Vietnam

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Welcome Speech by Ms Nguyen Thi Trang Nhung, Deputy Director of Science & Technology and Int. Cooperation Department, D-FISH

To the resource persons, Dr. Takayuki MATSUMOTO and Dr. Hiroshi ASHIDA; representatives from SEAFDEC, the delegates of member countries;

Ladies and Gentlemen,

On behalf of Science & Technology and Int. Cooperation Department, D-FISH, it is my honor to present here as the host country of the Regional Training on Monitoring Tuna Catch Data: at Tuna Cannery.

First of all, I would like to thank SEAFDEC for selecting Vietnam to be a host country for this training. Secondly, I would to express a great thank to Japanese Government through SEAFDEC Japanese Trust Fund Program for providing financial support of this Training, and thanks also to the resource persons, SEAFDEC, all participants and to all for attending to our workshop today to improve our capacity on the data collection at canneries.

Allow me to share with you some background information on the need for human resource development to improve tuna information collection in Southeast Asian region. I understand that our tuna fisheries in Southeast Asian Countries are contributing a significant and important amount in the western and central Pacific Ocean. But we have insufficient information of our tuna fishery resources considering that will be useful for sustainable development and management of our tuna fisheries. Data collection systems are also insufficient for conducting regional stock assessment and hence providing sound advices for tuna fishery management. Therefore, several meetings and trainings have been conducted over the years by SEAFDEC in collaboration with the Member Countries of SEAFDEC including Vietnam.

We understand the importance of the human resources for improving tuna fishery information collection to provide good data sources for stock assessment. While we are targeting at good quality and timely data on tuna fisheries data collection, I have been informed from most recent workshops conducted at Vietnam and in the region that it is often difficult to distinguish between juvenile yellowfin tuna and bigeye tuna in the tuna fisheries. That is the reason why we are here today on this training workshop to build our human resource capacity in order to enhance national capacity for improvement of the tuna catch data and also to improve capacity for checking accuracy of tuna identification at tuna canneries for relevant officials in the member countries of SEAFDEC.

During our training, I would like to remind you keeping in mind on the importance of yourself for contributing to the improvement of tuna information collection in your country in the very near future.

Thank you for allowing me to have this opportunity to provide these brief remarks. I wish you a positive, productive and successful meeting and an enjoyable stay in beautiful Nha Trang city and don't forget: you are taking good care of our fish. Thank you very much.

OPENING SPEECH

Mr. Tadahiro Kawata, Technical Coordinator of SEAFDEC
Training Workshop on Monitoring Tuna Catch Data at Tuna Cannery
3-6 July 2012, Nha Trang, Vietnam

Distinguished Resource Persons and Participants,
Ms. Nguyen Thi Trang Nhung, Fisheries Administration from Department of Science &
Technology and International Cooperation, Vietnam
Participants of the Training
SEAFDEC Training Department Staff
Ladies and Gentlemen
Good morning!

On behalf of SEAFDEC, it is my great pleasure for me to welcome all of you to this Training Workshop on Monitoring Tuna Catch Data at Tuna Cannery in Nha Trang of Vietnam. As all of us recognized that fisheries in one of the sector that very important for the Southeast Asian Region, which was always expressed at international and regional levels, especially in 2011 at ASEAN-SEAFDEC Conference in the Resolution and Plan of Actions on Sustainable Fisheries for Food Security for the ASEAN Region Toward 2020.

We are all aware that tuna is one of the most economically important commodities in the Southeast Asia not only for domestic consumption but also for export. Based on available statistics, the countries in this region have currently produced approximately 1.5 million tons of tuna per year, accounting for almost 40% of the world total production of tuna. Over the years, tuna production has been increasing the contribution from our region to the global tuna market. However, we believe that there is still a lot more to be done in the future to manage tuna fisheries in the region with the responsible manners to achieve long-term use of our fisheries resources and environment sustainability.

This program on tuna has been implemented since 2008 with the financial support from Japanese Trust Fund through SEAFDEC Training Department, under project entitled “Information Collection on Highly Migratory Species in Southeast Asian Waters”. One of the major objectives of this project is to enhance and build human resources capacity of the Member Countries for improvement of tuna information collection. Through the project implementation, a series of activities has been conducted, including regional and national meetings and workshops. With this effort, it is envisaged that you will be able to sustainably develop tuna fisheries in your home country. Various capacities in your country are needed to enhance in order to collect and improve data on tuna fisheries both for proper planning and management of tuna resources and also for qualitative data to be reported to SEAFDEC for regional fisheries statistics and also to tuna regional management organizations such as IOTC and WCPFC.

As we all know that, generally, data collection of the catch can be done at sea using fishing logsheet, from on landing site survey, and also at the processing unit. Through this 4-day training program, we are providing you knowledge and experience to verify accuracy of species identification at tuna cannery based on the international method using by WCPFC, as a way to validate the data collected from others that I mentioned. This process would also help us in dealing with the IUU-fishing, which is currently emerging issue at both international and regional levels.

Finally, to conclude this opening address, may I again request your active participation to make this training end successfully. I wish you all a successful training and hope you are able to transfer knowledge that you obtained from this Training through national program of activities in the near future. With that, now I am very happy to declare the Training Workshop on Monitoring Tuna Catch at Tuna Cannery opened.

Thank you very much !!!

List of Documents**Information Documents**

INF01	Prospectus
INF02	List of Participants

Training Documents and References

TD01	A Handbook for the Identification of Yellowfin and Bigeye Tunas in <u>Fresh Condition (v2)</u> . 2005. David G Itano.
TD02	A Handbook for the Identification of Yellowfin and Bigeye Tunas in <u>Brine Frozen Condition (v5)</u> . 2005. David G Itano.
TD03	A Handbook for the Identification of Yellowfin and Bigeye Tunas in Fresh, but <u>Less Than Ideal Condition(v6)</u> . 2006. Siosifa Fukofuka and David G. Itano.
TD04	Photographic Identification Guide for Billfish, Sharks, Rays, Tuna-like, and Non-Tuna Finfish Taken in WCPO Pelagic Longline Fisheries (v1). 2007. Janie Ann McAuliffe, David G Itano, and Stuart Arceneaux.
TD05	Photographic Identification Guide for Non-target Fish Species Taken in WCPO Purse Seine Fisheries. 2007. Siosifa Fukofuka and David G Itano.

CLOSING SPEECH

by Mr. Hidenao Watanabe, Assistance Japanese Trust Fund Manager

Training Workshop on Monitoring Tuna Catch at Tuna Cannery

3-6 July 2012 Nha Trang, Vietnam

Distinguished resource persons

Participants from the SEAFDEC Members Countries,

SEAFDEC Staff, Good Morning!

First of all, I would like to thank the Department of Science & Technology and International Cooperation and Nha Trang Coordinator for their kind cooperation and coordinating to organize this training. I would also like to gratefully acknowledge the support of the Japanese Government to make this training, and many thanks to participants for your great contributions and valuable inputs to this training which could help the improvement of tuna information collection in the region. I would also like to thank the staff of SEAFDEC Training Department for their preparation and organization this important training.

I would like also to express special thanks to the resource persons from the National Research Institute of Far Seas Fisheries – Fisheries Research Agency of Japan for their kind support and introducing tuna species identified skills during our training, and had led us to improve our tuna information collection skill.

I reiterate the main objection of this training Workshop is the improvement of catch data collection of juvenile big eye tuna which biomass has been deteriorating in our region. SEAFDEC therefore would seek the possibility to find the appropriate program of activities in order to support member countries to improve such data collection. We appreciate very much your comments and suggestions in moving towards improvement of data collection for sustainable development of the tuna fisheries in the region.

I am looking forward to the future programs of activities that SEAFDEC could support you to enhance your national human resource capacity with the financial support from Japanese Government through SEAFDEC. I hope some countries to request our support for such national human resource capacity training in 2012. Please be also assured that SEAFDEC will follow-up and communicate with you the proposed activities at this training.

Since we have accomplished almost our objectives of the training without unfortunate insufficiency time of survey at cannery and no chance of landing survey, I would like to extend our gratitude to all of you for making this training. Thank you very much once again for your cooperation and support. Considering the conduct of our four-day training, I now declare the Training Workshop on Monitoring Tuna Catch at Tuna Cannery closed. For those who will be travelling out of this beautiful city of Nha Trang and back to their respective countries, we wish you a happy and successful trip.

Thank you once again for your active participation during our four-day training.

Thank you very much!