

**Report of the Fifth Session of the
Working Party
on
Data Collection and Statistics**

Victoria, Seychelles December 1-2, 2003

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Opening of the meeting and adoption of the Agenda

1. The Fourth Meeting of the Working Party on Data Collection and Statistics (WPDCS) opened on December 1st 2003 in Mahé by the Chair of the Scientific Committee, Dr. Geoff Kirkwood, who welcomed the participants (Appendix I) indicating that, unfortunately, the Chair of the WPDCS, Mrs Rose-Marie Bargain, was not able to continue as Chair of the WPDCS. The participants agreed that the meeting be chaired by Dr Kirkwood. The Agenda for the Meeting was adopted as listed in Appendix II. The documents available for discussion are listed in Appendix III.

Progress Report of the Secretariat

2. Document WPDCS-03-01, which included sections about the availability of IOTC statistics for 2002 and the general status of the databases held at the IOTC, was presented by the Secretariat. The following sections summarize this report.

Data Collection

Availability of IOTC statistics for 2002

3. **Timeliness of reporting:** Fourteen countries (3 in 2002) submitted statistics to IOTC before the deadline of June 30. Furthermore, only partial statistics were submitted in most cases. Requests were sent to 59 countries in April-May 2003. Second and third requests were needed in most cases.
4. **Table 1** below shows the catches for 2002 available (**Rep**) and not available (**Unrep**, as catches of 2001 carried forward for non-available strata) in the IOTC Nominal Catches (**NC**) database by the deadline for data submission and before December 2003 (**01-Dec-03**). Only 32% of the catch (22% in 2002) was available by the deadline, with the 61% of the catches reported before December 1st, 2003. The reporting of species other than tropical tunas before the deadline was negligible.
5. The validation and verification of data not available in time is compromised, especially when data are submitted close to or during Working Party meetings.

Table 1. Proportion of Nominal Catches available (thousands of tonnes) by the deadline for data submission (30th June 2003) and before 1st December 2003

Availability 2002	30-Jun-03			01-Dec-03		
	Unrep	Rep	%Unrep	Unrep	Rep	%Unrep
Billfish	54	11	83	33	33	50
Neritic Tunas	280	35	89	176	138	56
Temperate Tunas	40	15	74	40	15	72
Tropical Tunas	490	424	54	235	679	26
TOTAL	1013	484	68	609	972	39

Table 2. Proportion of the NC, CE and SF statistics available at the IOTC Secretariat compared to the total catches estimated for 2002 (1st December 2003) and proportion of catches reported by official sources (SO) versus total catches so far reported.

2002	NC	CE	SF	SO
Available	972	643	614	920
Total	1581	1581	1581	972
% Available	61	41	39	95
% 2001	67	45	39	87















6. **Completeness of statistical data:** **Table 2** above summarizes the availability of statistics at the IOTC Secretariat as of December 1st, 2003. The proportion of statistics available for 2001 is shown for comparison. Levels of reporting therefore worsened in 2003, being very low.
7. Complete sets of data (Nominal Catch, Catch and Effort and Size Frequency statistics) for 2002 are only available for the European Community (EC), Sri Lanka, Netherlands Antilles, Malaysia and Australia¹. More details about the amount of data available regarding the different types of data gathered at the IOTC Secretariat can be found on page 3:

¹ This refers to fleets whose catches amounted to more than 10,000 tonnes in 2002.

Table 3: Statistics available to IOTC for the year 2002

FLEET	Catch	M/C	NC	CE	SF	DI	FC	FT	VR	TI	SO
EUROPEAN COMMUNITY	288	M									
INDONESIA	234	C									
SRI LANKA	165	M									
MALDIVES	160										
CHINA	5	M						N/A			
TAIWAN, CHINA	122										
IRAN, ISLAMIC REPUBLIC	118	M									
INDIA	97	M									
SEYCHELLES	55	M									
PAKISTAN	50	M									
NETHERLANDS ANTILLES	40							N/A			
JAPAN	39	M						N/A			
BELIZE	25							N/A			
OMAN	24	M									
PANAMA	24							N/A			
MALAYSIA	20	M									
THAILAND	17	M									
UNITED ARAB EMIRATES	14										
MADAGASCAR	12	M									
AUSTRALIA	10	M									
YEMEN	8										
COMOROS	8	M									
SAUDI ARABIA	7										
QATAR	7										
TANZANIA	4										
EGYPT	4										
HONDURAS	3							N/A			
MOZAMBIQUE	3										
EQUATORIAL GUINEA	2							N/A			
KENYA	2										
PHILIPPINES	2	C						N/A			
MAURITIUS	1	M									
BOLIVIA	1							N/A			
KOREA, REPUBLIC OF	1	M						N/A			
SOUTH AFRICA	1										
URUGUAY	1							N/A			
FRANCE TERRITORIES	1	M									
VANUATU	<1	M						N/A			
KUWAIT	<1										
ERITREA	<1	M									
BAHRAIN	<1										
SUDAN	<1	M									
JORDAN	<1										
DJIBOUTI	<1										
BANGLADESH	<1										
UNITED KINGDOM	<1	M									
EAST TIMOR	<1										
IRAQ	Unkn										
MYANMAR	Unkn										
SOMALIA	Unkn										
SINGAPORE	Nil										
NOT ELSEWHERE IDENTIFIED	3										
TOTAL	1581										

Key, Table 3

Catch	Recent catches amounting to (thousands of tonnes)	
M/C	Is Member (M) or Cooperating Non Member Party (C)	
NC	Nominal Catch	 Fully available
DI	Discards	 Partially available
CE	Catch and Effort	 Not available
SF	Size Frequency	 No or negligible discards (DI)
FC	Fishing Craft	 No activity reported/presumed (FT)
FT	Foreign Tuna Vessels Activity	 No ships over 24m reported/presumed to operate (VR)
VR	Vessel Record	 N/A Not Applicable (Foreign ships putting in to ports in the country are not (likely) to come from the Indian Ocean)
TI	Timeliness	 Good (before 1st July)  Fair (whithin July)  Poor (after 1st August)
SD	Data Source	 Statistics available from flag country  Statistics from both flag and country/ies other than flag country  All statistics from countries other than flag country  No statistics available at all

8. **Nominal Catches (NC):** The amount of Nominal Catch data available at the Secretariat regarding the year 2002 is slightly lower than that recorded for 2001. Either partial or complete sets of NC are available for 23 out of the 50 fleets that operated in the Indian Ocean during 2002.
9. The statistics recorded for several fleets are thought better quality than those available before. This is the case with Indonesia, Seychelles, Egypt and South Africa.
10. To date, no data or only partial nominal catch statistics have been received from several Member or Cooperating Non Member Parties (CNMP), namely Indonesia, India, Oman, Madagascar, Comoros, Vanuatu, Eritrea and Sudan. Furthermore, 1999-2001 nominal catches have not yet been submitted by Madagascar, Comoros and Eritrea.
11. Other important fishing parties not having submitted catch statistics to the IOTC are United Arab Emirates and Yemen. The catches of non-reporting longline fleets operating under several flags (Honduras, Belize, Panama, Equatorial Guinea, Bolivia, Uruguay, fresh tuna longliners from Taiwan, China, etc.) usually recorded under NEI are mostly unreported for 2002. A fleet of Ex-Soviet purse seiners has been operating since 1995 under the flags of Panama and Belize and their catches are unreported so far.
12. **Catch and effort and size-frequency statistics:** Catch and effort statistics are available for 17 fleets (13 from IOTC Members or CNMP) and size-frequency data from 12 fleets (9 from IOTC members or CNMP). The statistics available for Sri Lanka, Republic of Korea and Seychelles (deep-freezing longliners), are either incomplete or poor quality.
13. **Discard Data:** Discards are only available from Australia and the EC for 2002, despite the fact that discard rates are presumed high, especially from longliners and in purse seiners setting on tuna schools associated to logs.
14. **Fishing craft statistics:** Fishing craft statistics are usually available for fleets whose catches are available. Craft statistics are not available, incomplete or inaccurate for many artisanal fleets. The number of non-reporting vessels operating in the Indian Ocean for the period 1973-2002 was re-estimated this year from new information collected through the IOTC Sampling Programs and new vessel records.
15. **Vessel Record and Foreign Tuna Vessel Activity:** Many new data were received at the Secretariat during the year 2003, regarding both domestic and foreign fleets. Belize submitted lists of ships operating in the Indian Ocean for the year 2002. Nevertheless, the number of ships operating under several flags, including Honduras, Equatorial Guinea, Panama, Cambodia and fresh tuna longliners from Taiwan, China, is still uncertain.

16. **Data source:** The statistics available come usually from the flag country. However, the statistics of purse seine fleets presumed to be European owned but flagged in non-European countries were reported by the scientists covering the EC fleet.

Status of the IOTC databases

Main progress achieved during 2003

17. The Secretariat informed the Working Party on the progress achieved during 2003 in collection, validation and verification of catch, effort and fishing craft data in the IOTC databases. The data available at the Secretariat for 2002 is shown in **Table 3**.

18. **New datasets** were obtained in 2003 from:

- **The IOTC-OFCF Data Collection Programs (Thailand, Indonesia, Oman and Maldives):** More than 650,000 individual weights and 110,000 length-weight measurements have been collected to date through sampling and retrieval of historical records from tuna operators in Thailand and Indonesia. The IOTC Vessel Record is also under review to include the more than 2,500 vessel names and characteristics collected through these schemes. Other programmes under the scope of IOTC-OFCF inceptioned during 2003 refer to the sampling of yellowfin tuna caught by gillnet fisheries in Oman and the strengthening of sampling activities in Maldives.
- **Other IOTC Sampling activities (Sri Lanka and Malaysia):** Sampling programmes implemented in 2002 in Sri Lanka and the continuation of sampling by the Fisheries Research Institute of Penang (Malaysia) allowed the Secretariat to conduct more accurate estimates of un-reported fresh-tuna longline catches during 2003.
- **Egypt, South Africa, Seychelles and Thailand** submitted new series of nominal catches during 2003.
- **Belize, Indonesia, Madagascar, Malaysia, Mauritius, Seychelles, Singapore and Thailand** submitted new lists of foreign and/or domestic vessels operating in the Indian Ocean during 2002.
- **Biological data:** The **UK** provided during 2003 new series of biological data collected by observers. Many records were also collected through the IOTC-OFCF sampling in **Indonesia** and **Thailand**.

19. **Changes to data in the IOTC databases:** The following reviews conducted during 2003 led to major changes in the data in the IOTC databases:

- **Indonesia:** The catches of artisanal vessels were re-estimated for the period 1975-2001 mainly from FAO data. Current artisanal catches of tuna and tuna-like species are estimated to be above 150,000 tonnes.
- **The validation and verification of data** in the IOTC databases continued during 2003. Codes indicating poor quality were assigned where inconsistencies were found in specific records or complete series of catches or sizes.
- **Fishing Craft, Foreign Tuna Vessels Activity and Vessel Record** data were compared in order to complete, as much as possible, the craft statistics series. Each data series was also reviewed in order to give consistency to the data recorded, especially regarding changes due to inconsistent reporting of vessel characteristics or numbers throughout the years. The fishing craft statistics database is thought almost complete as refers the industrial fleets (purse seine and longline) in recent years.

Problem Areas Identified

20. Despite improvements in the data held by IOTC, the Secretariat identified several problem areas undermining the completeness, quality and timeliness of the information stored:

21. **Data availability:** Incomplete or non-reporting can be because the fisheries are not monitored, statistical systems cannot produce reliable estimates of catches or statistics are produced but not reported to IOTC.

Estimates from alternative sources are more or less complete depending on the information available. The following cases can be distinguished:

The IOTC sampling schemes provide estimates of nominal catch and size-frequency, for fresh tuna longliners, but no data are available for effort and catch location.

No size frequency statistics are available from **Taiwan, China** since 1989: These statistics are of utmost importance, especially for bigeye, albacore and billfish caught by longliners. The low coverage rates for

size frequency statistics collected on longliners from **Japan** are also of concern. The catch and effort and size frequency statistics reported by the Republic of **Korea** and the **Philippines** still remain of poor quality.

With the exception of the baitboat fishery for the Maldives where complete data sets are reported, no effort data and very few size-frequency data are available for artisanal fisheries, which produce nearly half the total catch in the Indian Ocean, particularly of neritic species.

The reporting of catches aggregated by species and/or gear is of concern. **Indonesia** alone has been reporting as much as 50% of the total catches reported as aggregates in recent years. These aggregates include significant amounts of tropical tuna and billfish.

Unreported catches of purse seine (30,000 t) and longline fleets (about 35,000 t), in recent years, amounted up to 10% of the total catches of tropical tunas and billfish in the Indian Ocean. No data are available for non-reporting deep-freezing longliners and nominal catch is, at best, estimated from vessels records using reporting fleets as comparators. The same is true for a fleet of ten ex-Soviet purse seiners operating under the flags of Belize and Panama.

The craft statistics of many coastal countries, having fleets operating artisanal gears, are unknown, incomplete or inconsistent. This is the case with the statistics of India, Indonesia, Iran, Madagascar and Yemen. The number of non-reporting longliners, mainly from Taiwan,China (fresh tuna), Honduras, Equatorial Guinea, Panama, etc. (deep-freezing) operating in the Indian Ocean is also uncertain, although the numbers estimated recently represent an improvement relative to previous years. The lack of reporting of characteristics that could help in the identification of individual vessels complicates the validation of vessel records.

22. **Data Quality:** Codes indicating poor quality are assigned to partial or complete series of catches when many inconsistencies are found during the validation of the catches or a large number of assumptions have to be made in estimates. The proportion of the total catch data considered to be of poor quality has increased since the late 1980's. This is a result of an increase in the activities of non-reporting fleets whose catches have to be estimated by the Secretariat.
23. **Timeliness of reporting:** This is covered above, but remains a question of major concern.

General Discussion on data collection

24. In spite of the existing deficiencies, the WPDCS considered that the improvements in the data situation were significant and commended the Secretariat for its effort to achieve these results. In particular, it was considered that the information obtained through the IOTC-OFCF Project is of the utmost importance, since it has led to better estimates of catches for the involved fleets and to a better knowledge of the fisheries of the region.
25. The WP noted the lack of catch and effort data from Taiwan,China between the 20 and 30 degrees East. The scientist from Taiwan,China informed that catches in this area have routinely been submitted to ICCAT. The WP recommended that this data be requested and added to the IOTC database.
26. The WP noted that the information collected regarding the IOTC Resolution 98/04 was the only data available for the estimation of catches of fleets from Parties not-reporting to the IOTC. The WP noted that an important number of longline vessels operating in the Indian Ocean, catching important amounts of tuna and billfish species, have length overall below 24 metres and that the reporting of these vessels is not-mandatory. The WP agreed that the reporting of vessels with LOA below 24 meters has to be encouraged if these fleets are to be properly monitored.
27. The Secretariat informed the WP on the risk of duplication of vessels in the record when the names had been translated from Asian to Latin characters. The WP agreed that the report of local names should be encouraged to avoid this problem.

Review of the Situation by Species

28. The Chairs of the Working Party on Tropical Tunas and the Working Party on Billfish presented their reports on the data situation for tropical tunas (Document WPDCS-03-05) and billfishes (Document WPDCS-03-06). These reports identify a number of common problem areas, among them the poor knowledge or lack of reporting of catches, effort and size frequencies for certain fresh tuna longline fleets, certain deep-freezing tuna longline fleets (since the mid-1980s), Indonesian longline fleet (in recent years) , ex-Soviet purse seine boats with flag of

convenience in recent years (for tropical tunas), and gillnet and/or other artisanal fisheries (in particular the gillnet/longline fishery in Sri Lanka) for billfishes.

29. The reports of the WPTT and WPB also noted the improvements that have taken place in a number of areas including: better level of reporting, in particular the new nominal catch, catch/effort and size frequency datasets from several countries, including South Africa and Seychelles; the revisions of the IOTC databases; the improvements in the Vessel Record database which has been updated with information of vessels operating under flags of non-reporting countries; improvements in the estimation of catches of non-reporting fleets; recovery of historical activity and size frequency data from processing plants, which produced about 250,000 new individual fish weight records by species from 1998 to 2002; collection of information on the activities of fresh tuna longliners in Thailand, Indonesia and Sri Lanka through the IOTC/OFCF Sampling Program, which has resulted in better estimates of catches for these fleets; the revised estimates of nominal catch and catch/effort of the Japanese longline vessels from 1952 to 1969, as well as the new estimates of nominal catches from 1975 to 2001 for Indonesia (which now take into account the IOTC eastern boundary); and the new/updated catch information for the Taiwanese longliners for the periods of 1954-1965 and 1966-1978.
30. In addition, the report of the WPTT elaborated on the data situation for yellowfin, bigeye and skipjack tunas.
31. The WPB remarked the magnitude of the data collection quality problems facing IOTC, in particular with regard to trying to determine catches by the very large artisanal fisheries, indicating that the IOTC/OFCF project will continue to improve the catch estimates through separation of unidentified billfish catches into separate species.
32. The WPDCS agreed that catches, effort and size frequency data from Taiwan, China are essential for the WPB to operate correctly. The amount and quality of size data collected on longliners from Taiwan, China was stressed. The WP was informed that the sampling on longliners of Taiwan, China was carried out by the fishermen and that a large number of fish is sampled out of the total fish caught. The WP was informed that the current sampling strategy will probably need to be reviewed due to the high workload that it posed on the fishermen.
33. The WPDCS agreed to emphasize that current IOTC's standards for data collection and reporting are minimum requirements to be met by member and cooperating parties. In many cases stock assessments and/or evaluation of the status of tunas and billfishes require more detailed information, which might be subject to confidentiality constraints. It was indicated that IOTC has the necessary mechanisms to deal with confidential data, as demonstrated by the work of the WPB, and recommends that, when required, confidential information should be available to the working parties.

Update on National Statistics Systems

Progress in the collection of data from supply vessels

34. Supply vessels are used by industrial purse seiners to deploy and keep track of fish aggregating devices (FAD) and to locate tuna schools. The characteristics and activities of these vessels in the Indian Ocean are partially unknown. The scientists from the EC informed that several meetings have taken place since last year to decide on the type of information to be collected on supply vessels and assure the cooperation from vessel owners. The WP was informed that a logbook to collect information on the activities of supplies will be implemented soon. The EC scientists noted that the majority of supply vessels are operating under non-EC flags, although this will not probably undermine the reporting.
35. The EC scientists also informed the WP on the progress regarding the collection of information on the dynamics of FAD used by purse seiners. It was noted that the number of FAD deployed in association with the purse seine fleet remains difficult to estimate. The lifespan of buoys seems to be short (averaging 10 days) as they are generally exchanged among different purse seiners or lost. The number of buoys bought by a vessel may be a good indicator of the number of FADs. Nevertheless, it was noted that the companies that sell the buoys consider this information confidential.
36. The scientist from AZTI (Spain) informed of an ongoing survey conducted in cooperation with three purse seiners aiming at estimating the numbers of FADs deployed per trip. The WP was informed that these data are currently considered confidential but that they could be released at the end of the program.

Review of data collection sections within the National Reports

37. Document **IOTC-SC-03- Inf.1** summarises tuna fishing in the British Indian Ocean Territory (Chagos Archipelago) Fisheries Conservation and Management Zone (FCMZ) during the 2002 / 2003 fishing season (April 2002 to March 2003). During this season, 37 longline vessels (mainly from Japan and Taiwan, China) caught a total of 1467 t, mainly of yellowfin and bigeye tuna, and 52 purse seine vessels (Spanish and French operated) caught 722 t of skipjack, yellowfin and bigeye tuna.
38. The WP commended the UK for the amount of information, especially biological data, collected on longline and purse seine fleets operating within the FCMZ.
39. The statistics of Japanese vessels operating in the Indian Ocean are reviewed in Document **IOTC-SC-03- Inf.4**. The Japanese scientists informed the WP that no substantial changes in the statistical systems have occurred during the last year. It was noted that size frequency data have routinely been collected on board by fishers but that the amount of data collected have been scarce throughout the last two decades.
40. The EU scientist informed the WP on a EC-Seychelles joint sampling program initiated this year in Seychelles aiming to collect biological information on tunas processed in the local cannery. Length and weight data, gonad weight by sex and sex ratio at size are routinely collected on large yellowfin tuna, bigeye tuna and albacore going through the cannery, and the results of this study will be provided to the IOTC. The extension of these activities during more years will be reviewed according to the results of the first year monitoring.

Problem areas in the data situation and possible improvements

IOTC/OFCF Project: Brief summary on the status of the Project

41. Document **WPDCS-03-03** presented an update on the activities carried out under the scope of the IOTC/OFCF project to improve national data collection systems during 2003. More than 650,000 size frequency records have been collected so far in Indonesia and Thailand, with a lot of biological information also recovered. These activities will allow the estimation of catches of fresh tuna Longliners operating in the East of the Indian Ocean. The collection of biological data is also important, taking into account the scarcity of this type of data in the IOTC databases. In addition, the IOTC/OFCF project has also taken over funding and technical assistance for the sampling programs in Maldives and the gillnet and handline yellowfin fisheries of Oman.
42. The Secretariat also informed the Working Party on the new activities carried out under the scope of the IOTC/OFCF Programme, including the drafting of Country Reports describing the statistical systems of several developing countries of the region. The Situation in each country will be reviewed during a Workshop scheduled in March 2004 in Mahé (Seychelles). The implementation or strengthening of data collection or data processing activities in selected countries could be proposed according to the results of the Work Shop. The IOTC/OFCF encouraged all participants to prepare Reports and attend to the Work Shop.
43. The WP congratulated the IOTC/OFCF for the progress achieved since the beginning of the Project.
44. The WP stressed the importance of the ongoing activities regarding the description of data collection and data processing in several countries of the region felicitating the IOTC/OFCF for this initiative. The WP was informed that the FAO is also involved with several projects of this type and that the information available can be accessed through the FAO Web Site.
45. The WP showed concern regarding the poor quality statistics reported for some artisanal fisheries, especially the gillnet fishery in Sri Lanka. It was agreed that the production of good catch estimates from Sri Lanka of utmost importance for the WPB and WPTT due to the to the high catches of tropical tuna and billfish species involved. The WP welcomed the ongoing Country Report on Sri Lanka and recommended that this country be given first priority if any specific actions are agreed to carry out in the different countries after the review of the Reports

Observer programs and bycatch data: new information gathered

46. The WP was informed that a pilot-scale observer programme on vessels from Taiwan, China started in 2001 and that two observers went on board three longliners this year. Information on fishing operations and data on target species, bycatch and discards and data on interactions with wildlife have been collected. Biological samples of some important species in the catch were also collected.

47. The UK (**IOTC-SC-03- Inf.1**) informed that an observer programme was again conducted in 2002/2003, with observations on 2 Japanese and 4 Taiwanese longliners. In this programme, biological sampling is carried out and data collected on target tuna, bycatch and discard species. In addition, complete hook-by-hook surveys are carried out of selected longline sets, for which all fish caught were landed. Collection of these observer data fulfils recommendations made by the WPDCS and WPTT.
48. Australia informed the WP that in 2003 a pilot scale observer programme commenced with five trips (45 sets observed) completed to date on Australian tuna/swordfish longliners operating in the Indian Ocean. The principal objective of the program is to gather information on species composition and quantities, weight and length structure and other related information on retained and discarded species. Observers are also recording information on fishing operations, and interactions with wildlife (seabirds and turtles) and environmental and oceanographic data.
49. The WP was informed on the recent investigations by Australian and Indonesian scientists that have revealed significant historical observer data from the Indonesian longline fleet operating in the Indian Ocean. These data will be analysed over the next 12 months as part of a collaborative research project between CSIRO and RIMF.
50. The Spanish scientists informed the WP that observers aboard Spanish purse seiners monitored by the Spanish Institute of Oceanography (IEO) and the AZTI started in 2003, with eight trips covered through observers so far, with the main objective of collecting data on bycatch and discards. Coverage rates are set to 5 to 10 percent of the total number of fishing trips. A similar program on French purse seiners should start in the following months. These surveys are likely to become permanent in the near future.
51. The WP was also informed that observers went aboard two Spanish longliners operating in the south west of the Indian Ocean.
52. As in previous years the WP noted the lack of data from recreational fisheries throughout the region. The group recommended that the availability of historical data for this catching sector should be explored in countries where organized recreational fisheries operate.
53. The scientist from the Republic of Korea informed that the Korean government initiated a fisheries observer programme in 2002 to monitor the activities of its distant-water fishing vessels, including those fishing for tunas, aiming at meeting the requirements of different Regional Fisheries Bodies.
54. The WP welcomed the recent commencement of observer programmes by a number of member countries, noting that onboard observers are in the best position to gather critical data on sex-specific size of billfishes, size frequencies for longline caught tunas, bycatch, biological samples, and to support the IOTC tagging programme. Given the number of observer programs being conducted, the WP suggested that a standardized set of protocols would be very useful in ensuring comparability of results.
55. Dr. Tom Nishida, who has been conducting a study of observer programmes in various countries, volunteered to coordinate the activities of a small group that, through correspondence and in collaboration with the Secretariat, would collect information and, if possible, present a proposal on standards for observer programmes in the Indian Ocean at next year's meeting.

Dissemination of IOTC data and documents

Progress on the development of an IOTC Atlas illustrating the Indian Ocean tuna fisheries

56. During the last WPDCS a small task force was created to study the possibility of producing an updated atlas of the tuna fisheries in the Indian Ocean. The report of this task force was presented in document **WPDCS-03-02**. The WPDCS agrees that such atlas would be an important contribution that would provide valuable information to scientists, policy-makers and fishers. It was agreed that the task force, in collaboration with the Secretariat, should develop a more detailed proposal for this project, including budget and staff workload implications, to be presented in the next meeting of the WPDCS. Also, since there might be other agencies working on similar projects (e.g. FAO and ICCAT) it is recommended that the possibility of collaboration with these agencies be further investigated with the aims of avoiding duplication of effort and inefficient use of resources.

Development of an IOTC Field Manual

57. The WPDCS discussed a proposal to develop a field manual containing descriptions and background information of standard methods and techniques to collect fisheries information. It was agreed that such manual would be useful to help countries fulfil their data requirements to the IOTC. It was indicated that the Secretariat has already developed some field manuals for the existing sampling programs, that IPTP and ICCAT have published field manuals in the past, and ICCAT is in the process of developing an updated version of their manual. The possibility of reusing information from these sources should be explored. It was agreed that the Secretariat should produce a proposal, including target development time, and present it in the next meeting of the WPDCS.

Development of a database on biological data

58. The WPDCS noted with concern that there is little available biological information on tuna and tuna-like species for the Indian Ocean, despite the Recommendation in this regard issued from the SC. It was noted that the current sampling programs are generating important biological information, and it was emphasized that the Indian Ocean Tagging Program is expected to produce a wealth of current biological information that would reduce some of the uncertainties associated to current stock assessments/status evaluations. Nevertheless, the WPDCS considers that further efforts are necessary in this area. In particular it is recommended that data required by the Working Parties be provided, including any possible confidentiality constraints associated to the data. The Secretariat should also request that data correspondents pass data requests to their Country's scientists and other agencies that might hold relevant information. Finally, it is recommended that the Secretariat do every effort to contact scientists that have participated in the Working Parties or are known to have relevant information and ask them to submit detailed information on length-weight, length-length, sex and maturity stage at size of tuna and tuna like species caught by domestic and/or foreign fisheries in the country.

Other matters

Future Status of the WPDCS

59. The WP discussed the need to have the WPDCS meetings independently from the SC meetings. It was agreed that the main reason why the WPDCS meetings were convened just before the SC meetings was to allow the participation of scientists attending to the SC meeting. The WP noted that this had not been fully achieved and that the participation of scientists from the region to the WPDCS was still very low. The WP further agreed that having the WPDCS separated from the SC involved the drafting of several reports, with a high level of duplication.

60. The WPDCS agreed that in view of the current situation there is no real need to have the meeting of the WPDCS independently from that of the SC. The WPDCS recommended that a Sub-Committee on Statistics be created under the umbrella of the SC. The WP, nevertheless, agreed that special sessions of the WPDCS could be convened to deal with subjects not relevant to the SC.

Adoption of the report

61. The Report of the Fourth Session of the WPDCS was adopted on December 2nd, 2003.

Appendix I. List of Participants

Ahmed Mohammed Al-Mazrooei
Director
Marine Science & Fisheries Centre
P.O. Box 467
Muscat
OMAN
e-mail: ahmed483@omantel.net.om

Alejandro Anganuzzi
Deputy Secretary
Indian Ocean Tuna Commission
P.O.Box 1011
Fishing Port, Victoria
SEYCHELLES
e-mail: aa@iotc.org

David Ardill
Secretary
Indian Ocean Tuna Commission
P.O.Box 1011
Fishing Port, Victoria
SEYCHELLES
e-mail: iotcsecr@seychelles.net

Javier Ariz
Scientist
Instituto Español de Oceanografía
P.O. Box 1373
Caretera de San Andres. No. 45
Santa Cruz de Tenerife
SPAIN
e-mail: javier.ariz@ca.ieo.es

Shui-Kai Chang
Associate Researcher
Fisheries Administration, Council of Agriculture
No. 1, Fishing Harbour North 1st Road, Chine
Cheng District,
KAOHSIUNG
TAIWAN, CHINA
e-mail: skchang@mail.dsfrdc.gov.tw

Juliette Dorizo
Fisheries Statisticien
Seychelles Fishing Authority
P.O. Box 449
Fishing Port, Victoria
SEYCHELLES
e-mail: jdorizo@yahoo.com

Alain Fonteneau
Scientist
Institut de recherche pour le développement, UR
109 THETIS
P.O. Box 570, Victoria
SEYCHELLES
e-mail: irdsey@seychelles.net

Marco A. Garcia
Systems Analyst/Programmer, IOTC
Indian Ocean Tuna Commission
P.O.Box 1011
Fishing Port, Victoria
SEYCHELLES
e-mail: marco.garcia@iotc.org

John Gunn
Senior Principal Research Scientist
Commonwealth Scientific and Industrial Research
Organisation
P.O. Box 1538
Castray Esplanade
Hobart
AUSTRALIA
e-mail: John.Gunn@csiro.au

Jean-Pierre. Hallier
Scientist
IRD - Centre de Recherche Halieutique
Méditerranéenne et Tropicale
B.P. 171
Av. Jean Monnet
Sète
FRANCE
e-mail: hallier@mpl.ird.fr

Miguel Herrera
Data Coordinator
Indian Ocean Tuna Commission
P.O.Box 1011
Fishing Port
Victoria
SEYCHELLES
e-mail: mh@iotc.org

John Kalish
Program Leader
Bureau of Rural Sciences
PO. Box 858
Canberra, Act
AUSTRALIA
e-mail: john.kalish@brs.gov.au

Geoffrey Kirkwood

Director, RRAG
Renewable Resource Assessment Group, Imperial
college
RSM Building, Prince Consort Road
London
UNITED KINGDOM
e-mail: g.kirkwood@ic.ac.uk

Laura Lema

Asociacion Nacional de Armadores de Buques
Atuneros Congeladores (ANABAC)
Txibitxiaga, 24 entreplanta
Bermeo
SPAIN
e-mail: laura.lema@vi.ieo.es

Vincent Lucas

Biologist
Seychelles Fishing Authority
P.O. Box 449
Fishing Port
Victoria
SEYCHELLES
e-mail: vlucas@sfa.sc

Shobha Marwah

Director (Fy Statistics)
Dept. of Animal Husbandry & Dairy, Ministry of
Agriculture
New Delhi
INDIA
e-mail: shobhamarwah@hotmail.com

Peter Makoto Miyake

Scientific Advisor
Japan Tuna
3-3-4 Shimorenjaku, Mitaka-Shi
Tokyo
JAPAN
e-mail: miyake@sistelcom.com

Dae-Yeon Moon

Senior Scientist
National Fisheries Research .& Development
Institute
408-1, Sirang-Ri
Gijang-Up, Gijang-Gun
Busan City
KOREA
e-mail: dymoon@nfrdi.re.kr

Iago Mosqueira

Scientist
AZTI Fundazioa
Txatxarramendi Ugarteia, z/g
Sukarrieta (Bizkaia)
SPAIN
e-mail: imosqueira@suk.azti.es

Tsutomu (Tom) Nishida

Research Coordinator for Ocean and Resources
National Research Institute of Far Seas Fisheries
5-7-1, Shimizu - Orido
Shizuoka
JAPAN
e-mail: tnishida@affrc.go.jp

Hiroaki Okamoto

Scientific Researcher
National Research Institute of Far Seas Fisheries
5-7-1, Shimizu - Orido
Shizuoka
JAPAN
e-mail: okamoto@fra.affrc.go.jp

Pilar Pallarés

Scientist
Instituto Español de Oceanografía
Corazón De María 8
Madrid
SPAIN
e-mail: pilar.pallares@md.ieo.es

Jose Ignacio Parajuá Aranda

Adviser
Asociacion Nacional de Armadores de Buques
Atuneros Congeladores (ANABAC)
Txibitxiaga, 24 entreplanta
Bermeo
SPAIN
e-mail: indemar@retemail.es

Renaud Pianet

Biologiste des peches
IRD - Centre de Recherche Halieutique
Méditerranéenne et Tropicale
B.P. 171
Av. Jean Monnet
Sète
FRANCE
e-mail: renaud.pianet@mpl.ird.fr

François Poisson

Fisheries Statistician
Indian Ocean Tuna Commission
P.O.Box 1011
Fishing Port, Victoria
SEYCHELLES
e-mail: fp@iotc.org

Koichi Sakonju

IOTC-OFCF Project Manager
Indian Ocean Tuna Commission
P.O.Box 1011
Fishing Port
Victoria
SEYCHELLES
e-mail: ks@iotc.org

Bertrand Wendling

Technical Advisor

Seychelles Fishing Authority

P.O. Box 449

Fishing Port

Victoria

SEYCHELLES

e-mail: wendling@seychelles.net

Appendix II. Agenda of the Meeting.

1. *Progress Report of the Secretariat on data related issues*
 - ***General status of Reporting during 2003.***
 - ***Status of the IOTC Databases.***
 - ***Progress achieved in 2003 and remaining problem areas.***
2. *Review of the situation by species*
 - ***WPTT***
 - ***WPB***
3. *Update on National Statistical Systems*
 - ***Progress in the collection of data from supply vessels.***
 - ***Review of sections on data collection from the National Reports.***
4. *Problem Areas in the Data Situation and Possible Improvements*

Problem areas affecting data collection, timeliness and completeness of data submissions.

 - ***IOTC-OFCE Project: Brief summary on the status of the Project.***
 - ***Observer programmes and by-catch data: New information gathered.***
5. *Dissemination of the IOTC Data and Documents*
 - ***Progress on the development of an IOTC Atlas illustrating the Indian Ocean tuna fisheries.***
 - ***Development of an IOTC Field Manual.***
 - ***Development of a database on biological data.***
6. *Other matters*
 - ***Future status of the WPDCS.***
7. *Adoption of Report*

Appendix III. List of Documents

WPDCS-03-01	Progress Report of the Secretariat. <i>IOTC Secretariat</i>
WPDCS-03-02	Proposal for an IOTC Atlas of Tuna Fisheries. <i>A. Fonteneau</i>
WPDCS-03-03	IOTC-OFCF sampling programmes: Status Report. <i>IOTC Secretariat</i>
WPDCS-03-04	Definition of Criteria to identify FAD and free school sets based on the species composition and average weight of the samples from the Indian Ocean European fleet of purse seiners. <i>Pallarés ,P.; V. Nordstrom; A. Fonteneau ; A. Delgado de Molina and J. Ariz</i>
WPDCS-03-05	Report from the WPTT on the data situation for tropical tunas
WPDCS-03-06	Report from the WPB on the data situation for billfish

Appendix IV. List of Recommendations issuing from the WPDCS

1. The WP noted the lack of catch and effort data from Taiwan,China between 20 and 30 degrees East. The WP recommended that this data be added to the IOTC database.
2. The WP noted that the IOTC vessel record is in some cases the only information available to assess the size of non-reporting fleets pointing out that the reporting of vessels with length overall below 24 m is non-mandatory. It was further noted that numerous non-reporting vessels are likely to have LOA below 24 m. The WP recommended that the reporting of vessels with LOA below 24 meters be encouraged to allow a better monitoring of non-reporting fleets.
3. The WP agreed that the use during the species Working Parties of data at a higher degree of resolution than those specified in the Mandatory Statistical Requirements of the IOTC might be useful. The WP recommended that these data, when available, be reported and agreed that IOTC confidentiality rules be applied regarding its dissemination.
4. The WP stressed the importance of the ongoing IOTC/OFCF activities regarding the description of data collection and data processing in several countries of the region and recommended that these activities continue in the future.
5. The WP welcomed the ongoing IOTC/OFCF Country Report on Sri Lanka and recommended that this country be given first priority if any specific actions are agreed to carry out in the different countries after the review of the Reports.
6. The WP noted that several observer programs have been incepted in the Indian Ocean in recent years. The WP recommended that a standardized set of protocols be created for observers and presented to the next meeting of the WPDCS.
7. The WP agreed on the usefulness of producing an Atlas of Tuna Fisheries in the Indian Ocean. It was agreed that the task force, in collaboration with the Secretariat, develop a more detailed proposal for this project, including budget and staff workload implications, to be presented in the next meeting of the WPDCS.
8. The WP agreed on the usefulness of producing a Field Manual on the basis of those published by other tuna Regional Fishery Bodies. It was agreed that the Secretariat should produce a proposal, including target development time, and present it in the next meeting of the WPDCS.
9. It is recommended that the Secretariat do every effort to contact scientists that have participated in the Working Parties or are known to have relevant information and ask them to submit detailed information on length-weight, length-length, sex and maturity stage at size of tuna and tuna like species caught by domestic and/or foreign fisheries in the country.
10. The WPDCS agreed that in view of the current situation there is no real need to have the meeting of the WPDCS independently from that of the SC. The WPDCS recommended that a Sub-Committee on Statistics be created under the umbrella of the SC. The WP, nevertheless, agreed that special sessions of the WPDCS could be convened to deal with subjects not relevant to the SC.