

SUMMARY OF THE DIFFERENT TAGGING ACTIVITIES OF THE INDIAN OCEAN TUNA TAGGING PROGRAMME (IOTTP)

IOTC Secretariat

Small-scale and pilot projects:

In Dec 2004, a final report with the details of the expenses was sent to the EU for their approval and closure of the first Grant Agreement signed between IOTC and the DG-FISH in November 2004. The total amount of this operation was 588,118.70 USD (including counterparts) from which 211,258.86 USD are under the EU funding. The funding from the DG-FISH allowed IOTC to organize 8 pilot and small-scale projects and studies on tagging and bait. Moreover, the fund were also used to start the publicity and communication campaigns to maximize the recoveries, to buy tagging material and start tag seeding onboard the purse-seine fleet. The final report was accepted by the DG-FISH in May 2005 and we are now waiting for the last payment to be made to the IOTC. A new proposal is ready to be submitted to the DG-FISH to continue these actions in 2005-2006.

Table 1. Budget of the pilot and small-scale tagging projects funded by the DG-FISH

<i>Project title</i>	Final budget (in USD)
Projet Pilote Mayotte	3,861.20
Pilot Project in Oman	5,612.38
Pilot Project in Seychelles	44,107.15
Live-bait Pilot Project in Seychelles	7,272.75
Small-scale tagging in Maldives	54,488.08
Simulation study of tagging requirements	18,235.31
Study on sport fishery tagging	6,000.00
Publicity and Communication	13,713.95
Tag recoveries	54.15
IOTC Tagging Assistant	21,066.00
Miscellaneous Travel	9,217.50
General tagging supplies	27,630.39
TOTAL	211,258.86

IOTC received a voluntary contribution of 80,000USD from the government of Japan in 2002 and 2003 and of 249,000USD in 2004. This last funding will be dedicated to a project in the Eastern part of the Indian Ocean which will involve the government of Japan, the CSIRO, the Indonesian authorities and IOTC. This project was delayed due to the tsunami in Indonesia in December 2004. An MoU between all the parties is now being drafted to start the operation as soon as possible. The contribution of the government of Japan allowed IOTC to organize 5 tagging projects and studies, to start the organization of the project in the Eastern Indian Ocean and to extend and increase the publicity campaign in the Indian Ocean.

Table 2. Budget of the pilot and small-scale tagging projects funded by the government of Japan

Project Title	Final Budget (in USD)
Small-scale tuna tagging project in Mayotte	14,760.26
Small-scale tuna tagging project in Maldives	2,194.35
Tuna tagging project in the eastern IO	1,140.41
Publicity	3,862.62
Simulation consultancy	35,844.68
Material	23,139.05
Reward	1,277.58
Travel	10,932.28
Live bait survey	2,822.95
Small-scale project in Lakshadweep	32,361.12
TOTAL	128,335.30

SUMMARY SMALL-SCALE IN MALDIVES

- Period : August 2004
- Purpose : study the interaction between the fishery of Maldives and the industrial fisheries of the Indian Ocean
- Objective: tagged and released 4000 tunas (80% skj ; 20% yft)
- Actual recovery rate: 5,25%
- Future: releasing a minimum of 12000 tags all around Maldives in a 30 month period.

	Releases	Recoveries
SKJ	3751	218
YFT	1258	44
NA	15	2
TOTAL	5024	264

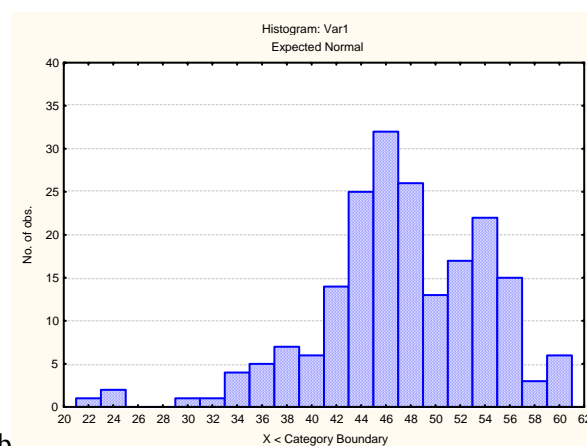
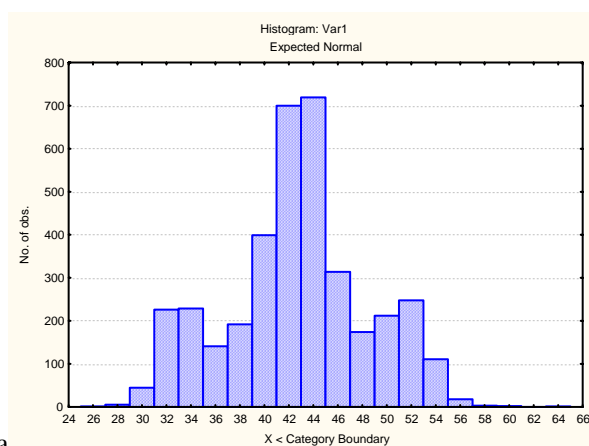


Figure 1. Length frequency of the skipjack (a) released (n=3751) and recovered (n=200) during the Small-scale project in Maldives.

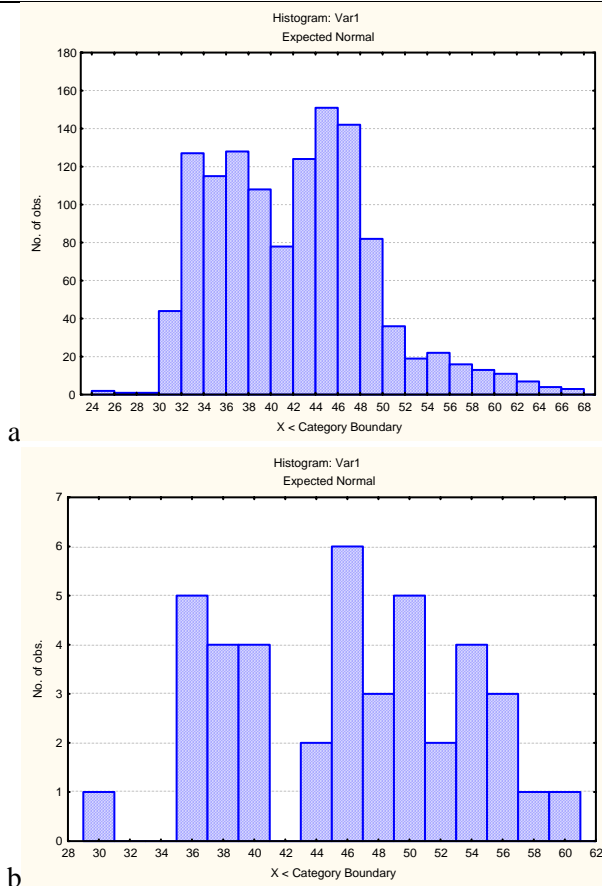


Figure 2. Length frequency of the yellowfin (a) released (n=1258) and recovered (n=41) during the Small-scale project in Maldives.

Comments: the low recovery rate of this particular programme (in comparison to the previous tagging project in Maldives where the recovery rates were), may be due to the fact that releases occurred at the boundary of the Maldivian fishery area making most of the fish to disperse or move away from the fishing range. The lower overseas recovery rates could be due to poor publicity of the Maldives programme in overseas fisheries or simply tagged fish have not yet been caught. Moreover around 10 recoveries occurred in Sri Lanka but we still don't have the detailed information. Finally a recovery occurred in Mauritius and we are trying to trace the fish to retrieve all the information. This fish was caught in march 2005, around 7 months after it was released.

SUMMARY SMALL-SCALE IN MAYOTTE

- Period : February-June 2004
- Purpose : tag medium size yellowfin in collaboration with local fishermen
- Objective: tagged and released 350 yellowfin
- Actual recovery rate: 23% (27% taking into account only the small-scale project)
- Future: releasing around 350 tags during the next fishing season and taking into account the very high recovery rate, releasing a minimum of 20 archival tags.

	Releases	Recoveries
SKJ	4	0
YFT	116	28
BET	1	0
TOTAL	121	28

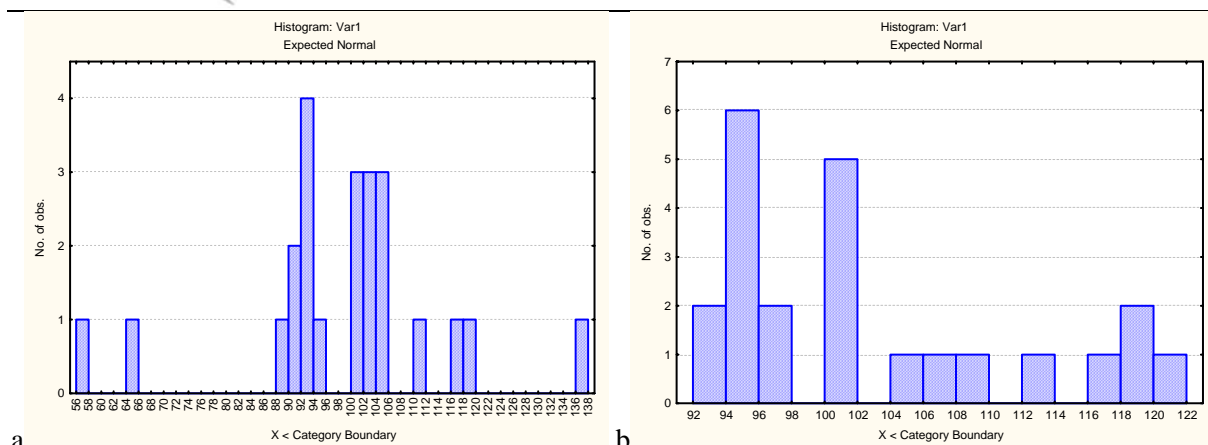


Figure 3. Length frequency of the yellowfin (a) released (n=116) and recovered (n=23) during the Pilot and Small-scale projects in Mayotte.

Comments: the recovery rate for this project is very high, 27%, particularly for such a small number of tagged fish. Unfortunately, the fishing season was not very good in 2004 in the Mozambique channel and the objective of 350 fish could not be reached. However, Mayotte seems to be an interesting place to make some archival tagging in the future project (high recovery rate, good size of the fish).

SUMMARY SMALL-SCALE IN LAKSHADWEEP, INDIA

- Period: April 2004
- Purpose: study the interaction between artisanal and industrial fisheries
- Objective: tagged and released 4000 fish
- Actual recovery rate: 0.7%
- Future: continue this small-scale with the same objective during the next fishing season.

	Releases	Recoveries
SKJ	88	5
YFT	1059	3
TOTAL	1147	8

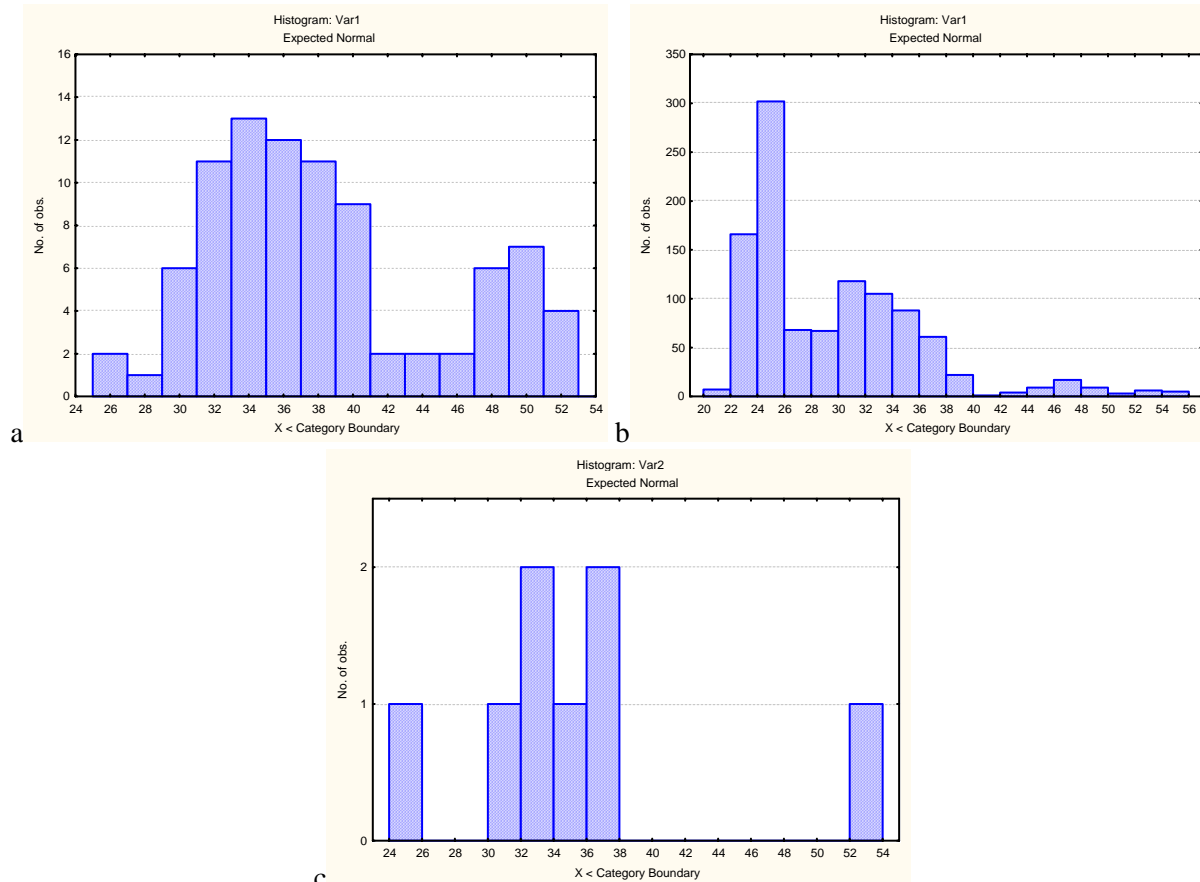


Figure 4. Length frequency of the (a) yellowfin (n=88) and (b) skipjack (n=1059) released and of the 8 recoveries during the Pilot and Small-scale projects in Lakshadweep, Minicoy.

Comments: this tagging project in Lakshadweep was the first time that tunas are tagged in the Indian waters. Staff of the Fishery Survey of India had to be trained in tagging techniques and a mission was organized to do so. The project started late, at the end of the fishing season for the area, due to unavoidable administrative delays. Surprisingly, the length of the fish tagged was very small (22 to 26cm) and the tags used were too long and less than ideal for fish of this size. The low recovery rate could be the result of *i*) the end of the fishing season, as the number of trips decreased the probability to capture tagged fish, *ii*) a high natural mortality due to the use of 14cm tags on 22-26cm fish, *iii*) problem of liaison between the authority in charge of fisheries in Lakshadweep and Minicoy and the Fishery Survey of India. However, tagging very small fish is a very good opportunity to have information on the fish just after the recruitment and this programme should continue with more suitable material.

This project might be continued in 2005-2006 depending of the availability of funds from the EU DG-Fish. Other projects were designed to be complementary to the previous small-scale and to the main phase of the project the RTTP.

Table 3. Estimated budget of the pilot and small-scale tagging projects proposed for funded in 2005-2006 to the DG-FISH

Pilot and Small-scale projects	2005 EC cost
1. Small-scale tagging in Mayotte	€40 160
2. Small-scale tagging in India, Lakshadweep islands	€19 808
3. Small-scale tagging in Maldives	€48 963
4. Small-scale tagging in South Africa	€21 750
5. Tag seeding operations	€1 700
6. Pilot tagging on the Coco-de-mer seamount	€28 000
7. Support to small-scale tagging projects	€39 000
Total	€199 381

2. Regional Tuna Tagging Project – Indian Ocean

The RTTP-IO, funded under the 9th EDF for 14 millions €, was officially launched on the 6th of May 2005 in Victoria, Seychelles by Alejandro Anganuzzi, Executive Secretary of the IOTC, Monique Andreas Esoavelomandroso, Secretary-General of the IOC, Juan-Carlos Rey, EU regional delegate in Mauritius and Ronnie Jumeau, Minister for Environment and Natural Resources of Seychelles. The team is now almost complete with Jean-Pierre Hallier as Chief Coordinator, Michael Stockwell as Administrative and Financial Officer and Teresa Athayde as Publicity and Tag Recovery Officer, the Aita Fraxku and the Kermantxo as the tagging vessels. The RTTP-IO also opened officially their offices in Victoria, Seychelles two weeks ago. A specific database was designed by Nishan Sugathadasa, System manager at the IOTC.

Licences were obtained for these two boats to operate in the following countries: Madagascar, Mayotte, Comoros, Iles Eparses (Fr), Mozambique, Kenya, Tanzania, Yemen, Oman and Iran. The expected schedule is for the next months:

- **July, August** (Baiting: Madagascar, Tanzania, Kenya, fishing: SW & W Seychelles)
- **September, October, November** (Baiting: Yemen, Oman; Fishing: Arabian Sea, N Somalia)
- **December** (Baiting: Chagos, Seychelles; Fishing: E Seychelles)

The first cruise of the project started the 3rd of May with short trials trips around Seychelles during which almost no suitable bait, as expected, were caught, and around 40 fish were tagged using trolling lines. Due to the lack of bait, it was then decided to sail to Madagascar and the boats left on the 17th of May. During one month the boats operated in the Mozambique Channel and tagged 4686 fish in the waters of Madagascar, Mayotte and Comoros. The bait were exclusively fished in Madagascar as it was complicated for the boats to enter the lagoon of Mayotte and Comoros islands looked quite poor in bait. Mainly, the boats used as bait 2 species of sardines, *Ambligaster sirm* and *Sardinella gibbosa*. These species were found in quite large quantities around Nosy Be, in the north of Madagascar.

Three regional tagging technicians were onboard the two vessels during this cruise, from Comoros, Madagascar and Mozambique. Jean-Pierre Hallier, Chief Coordinator of the project and Julien Million, IOTC Tagging Assistant, were also onboard during this trip in addition to the technical assistance provided through a service contract with Mc Allister Elliot and Partners. Furthermore, during the second week of trials in Seychelles, a regional tagging technician from Seychelles Fishing Authority was invited to participate in the trials trips, to be trained in the tagging techniques and to explain to local fishermen the purpose of the action.

The activities of the boats during the first cruise are summarizing in the following figure:

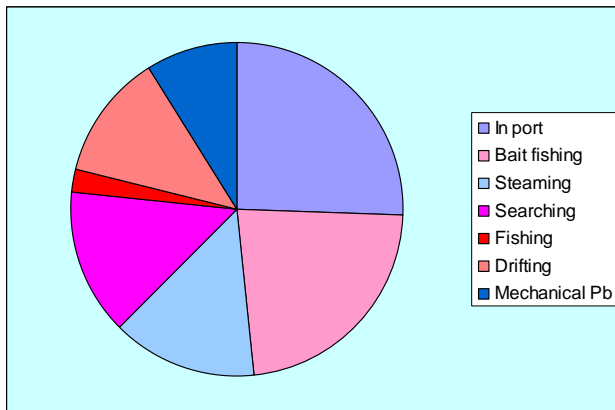


Figure 5. Activities of the boats during the 1st cruise of the RTTP-IO.

	Releases	Recoveries
SKJ	4035	13
YFT	574*	46
BET	77	0
TOTAL	4686	59

*4 YFT were implemented with archival tags type wildlife MK9 coming from TAGFAD project

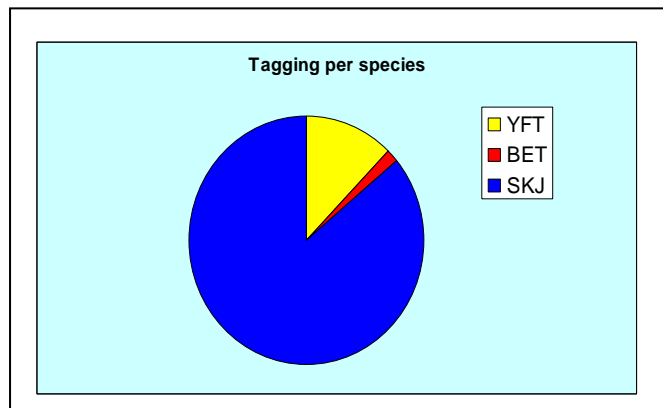
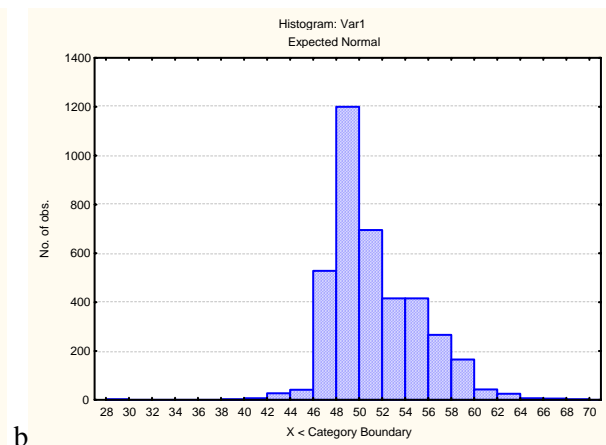
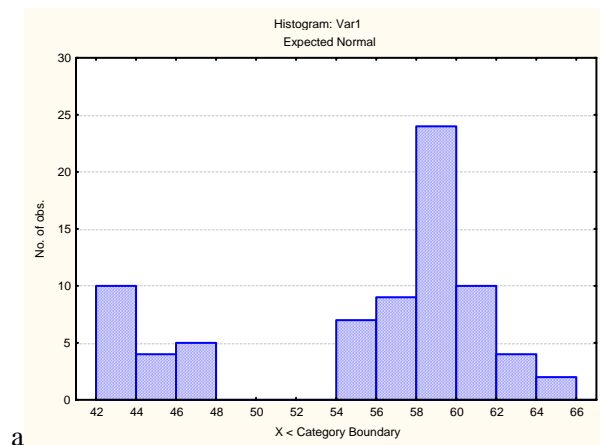


Figure 6. Numbers of fish tagged per species during the first cruise of the RTTP-IO.



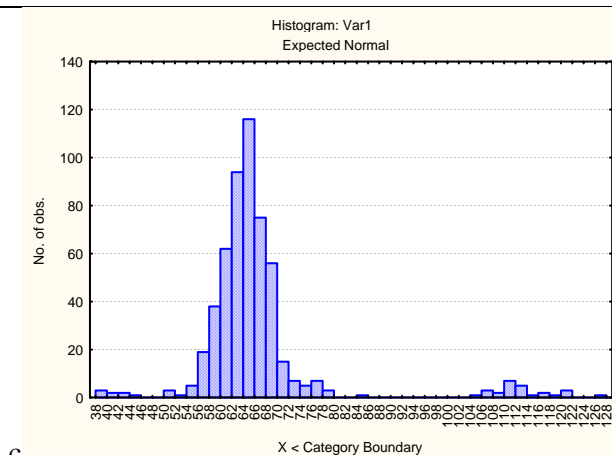


Figure 7. Length frequency of the (a) bigeye (n=88), (b) skipjack (n=1059) and (c) yellowfin released during the 1st cruise of the RTTP-IO.

As the boats reached the Mozambique Channel lately in the season, the tagging of large number of fish was difficult. However, this action occurred when the purse-seine fleet was leaving the area and ensured a low immediate recovery rate and a good dispersion of the tagged tuna. This might allow recapture in other areas.

To date, 59 recoveries occurred in port Victoria onboard the purse-seine fleet (YFT recovery rate: 8%, SKJ recovery rate: 0.3%). Unfortunately, most of the recapture fish had an at-sea time less than one week. However, all the efforts developed during the preparation and the 1st cruise of the project have to be continued and the assistance of all the countries of the Indian Ocean, members or not of IOTC, and of the DWFN is requested and will be appreciate.

Due to engine problem on the Aita Fraxku, which resulted in three weeks of repairs in Diego Suarez, the boats almost did not tag any fish during the last month. They are now moving to the Tanzanian and Kenyan waters to continue the 2nd cruise. To be continued...