

ROP-BFT

ICCAT

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Implementation Report

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MRAG

In association with



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Acronyms

CPC	Contracting and Cooperating Non-contracting Parties (ICCAT)
EU	European Union
JFO	Joint Fishing Operation
MoU	Memorandum of Understanding
PNC	Potential Non-compliance (event)
ROP-BFT	Regional Observer Programme for Bluefin Tuna
SCRS	Standing Committee on Research and Statistics
SoC	ICCAT Standards of Conduct and Behaviour for Observers

Executive Summary

The service provider for implementing year seven (April 2016 / March 2017) of the ICCAT ROP-BFT comprises of a Consortium led by MRAG based in London and COFREPECHE in Paris assisted by regional partners located around the Mediterranean. This is the seventh year that the Consortium has been awarded the contract to implement the ROP-BFT and experience gained in previous years has been used to enhance systems in place for recruitment, training and deployment of observers and overall performance of the Programme.

The ROP-BFT allows the Commission to assess compliance with the regulatory framework. During year seven of the ROP-BFT 145 observers have been trained, equipped and mobilised for 129 purse seine deployments, of which two were cancelled, 17 completed and 12 current deployments on farms to date, achieving 100% observer coverage on authorised purse seiners and farms, which included monitoring all fishing, transfer, caging and harvesting activities. This report describes the key issues faced in assessing compliance with the regulatory framework during implementation of year three of the ROP-BFT divided into operational and technical categories and focuses on issues that affect the observer role during deployments.

Estimating tuna transfers from video records: The key technical issue across all deployment types (on purse seiners and farms) was the inability to consistently estimate the amount of tuna transferred from video records. This was mainly a result of poor quality video records and / or viewing facilities (on vessels) or video availability immediately following the transfer operation. Some operators repeated transfers during caging operations because the initial video record was unsuitable for providing a means of accurately estimating the amount of tuna. Therefore further research / investigation is required to recommend a minimum standard of camera and viewing equipment for at sea conditions. Such an investigation should also produce recommendations on procedures that should be followed by operators so that the video record covers the entire transfer process and produce a video record that could be provided to the observer immediately following the transfer to ensure they have sufficient time to review the footage during their deployment. It can also be very difficult for an observer to determine if video footage has been tampered with when cuts in the video are hidden by cross fades. This problem is most likely when observers are not provided the video of the transfer immediately.

Improved consultation between CPCs, Secretariat, SCRS and ROP-BFT Consortium: During 2015 no meeting was held between CPCs, the Secretariat, SCRS and the Consortium. In previous years, meetings were held which proved to be constructive in improving the Programme and the Consortium would propose that they be continued prior to the next fishing season.

1 Introduction

This was the seventh year that the Consortium (Service Provider) has been awarded the contract for the provision of services to implement the ROP-BFT (Programme). The Consortium adapted their approach incorporating lessons learned through implementing the Programme during previous years. The report covers key activities conducted in preparation for the Programme and deployments under the contract for services to implement the ROP-BFT 2016/2017.

The principle role of the Service Provider remains to implement the main clauses of the regulatory framework¹ relevant to the ROP-BFT through the implementation of a framework equipped to recruit, train and deploy observers in the Mediterranean Sea; and manage and submit the observer deployment outputs within 20 days of the completion of a period of observation. Technical components of the Programme covered monitoring activities of fishing, transfer and caging phases to date. Harvesting has just begun at the time of writing for this year and continues throughout the first quarter of 2017.

There were no key changes to the observer role during the 2016 fishing season with the two key roles remaining those introduced during the 2013 season, the reporting of potential non-compliance events (PNCs) and observers not signing relevant documents unless observer and operators estimation had less than a 10% difference in estimates and a video record fully compliant with Annex 8 of Recommendation 14:04..

Fishing activities were conducted for one month between mid-May and mid-June; followed by caging operations which extended as far as September in some cases where environmental conditions hindered transfers at farms. This year saw the third year of the reintroduction of the purse seine fishery within Norwegian waters during September and October with a single observer deployed.

Harvesting operations were performed at one farm specialising in fresh exports. The main harvesting season will occur between October and January when the large-scale carrier / processing vessels move into the Mediterranean. As such this report only focuses on the fishing and caging operations to date.

The structure of the report summarises the implementation process before moving to operational components covering observer deployments on purse seiners and farms, the observations carried out to satisfy the requirements and reporting to ICCAT. The report concludes with a summary of the key outcomes and lessons learned; plus potential solutions for introducing improvements to the programme.

Each component of the report is presented in Table 1.

¹ ICCAT Recommendations. 14-04, Annex 6 sets out the specific observer tasks for recording fishing, transfer and farming activities.

Table 1: Report Content.

Implementation Activity	Section	Main Content
Programme Development and Implementation	2	Outline of development activities Summary of observer coverage on purse seiners and farms
Methodologies used for estimating the amount of tuna	3	Techniques used by operators and observers Transfer video record availability and coverage
Potential Non-Compliance Events	0	Summary of PNCs
Programme outputs	5	Submitting deployment outputs Submission of data covering ROP-BFT 2011-2014 to the SCRS
Scientific monitoring activities	0	Scope of biological sampling
Summary of Key Outcomes of ROP-BFT 2016	7	Quantifying tuna through the use of Video records Stereoscopic systems
Recommendations	8	Suite of recommendations distinguishing those which are the responsibility of the Service Provider and those of ICCAT: Improving general operational framework Improving monitoring tasks and observer duties
Conclusions	9	Main findings based on lesson learned and steps required to improve future implementation

2 Programme Development and Activities

2.1 Programme Development

A review of data management and reporting obligations was performed prior to the operational (training and deployment) phase of the Programme. Inputs were provided by the SCRS at the point of submission of the 2014 consolidated database (Section 5) regarding overall data outputs of the programme which were taken in to consideration in the review of the data management system. This review found the existing systems to be adequate for purpose with changes relating to the new regulatory requirements for control transfers at sea and at farms.

Systems for quality management were developed further with automated data checks further enhanced within the data management system.

Overall the programme development comprised of the following components:

- Review of changes to regulatory framework; obtain a good understanding of the implications and incorporate the necessary changes into ROP-BFT;
- Consultation with the ICCAT Secretariat, and SCRS on operational and technical requirements;
- Production of an updated Programme Manual and training material for approval incorporating lessons learned during implementation;
- Complete observer recruitment;
- Procure and distribute observer equipment that required replacement and purchase additional sets; and
- Deliver training prior to the purse seine season.

2.2 Operational

2.2.1 Deployments on Purse Seiners

During the 2016 ROP-BFT, observers were deployed on 129 purse seine vessels (Table 2). Observers were mobilised to 24 ports in the Mediterranean and one in Norway, and embarked on vessels specified in the official observer request.

Observers were assigned vessels on the basis of nationality and language skills so as to adhere to the requirements of the programme. All deployments were performed without incurring any delays caused by the Consortium or observers.

The deployments by flag State / CPC are set out in Table 2. In total, 2,802 observer sea days were completed on 129 purse seine vessels, this represents a 23% increase in observer sea days relative to 2015.

During the season, the Consortium faced important difficulties regarding the disembarkation of the regional observers deployed on the Libyan fleet. On a list of 16 vessels observed, 12 vessels disembarked the observer at the end of the season in a different port to the port stated in the official request (10 in Malta, 1 in Izmir and 1 in Chios–Greece). The Consortium was informed at the last minute about this new port of disembarkation which created important extra costs for the programme. The observers deployed on the Libyan fleet are Arabic and the huge majority of them do not have a Schengen visa. These non-expected disembarkations in Malta or Greece (i.e. the Schengen area) created considerable logistical problems as the observers can only travel onward outside the Schengen area. Given that this occurred in mid-June, during Ramadan when all the flights from / to Arabic countries are practically fully booked. The observers stayed in standby in Malta under the operators'

responsibility which is clearly not satisfactory. The Libyan vessels disembarked the observers and the crew in Malta as most of them have European crew on board. The operators indicated that the cost of a travel back to Tunisia with the fishing vessel is too expensive and requested an alternative solution.

Table 2: Observer coverage on purse seiners monitoring fishing and transfer operations.

Flag State/CPC	Vessels (n)	Obs. Sea Days*(n)
Albania	1	30
Algeria	13	332
Croatia (EU)	11	341
Egypt	2	36
France (EU)	17	244
Italy (EU)	12	156
Libya	16	428
Malta (EU)	1	11
Morocco	2	51
Norway	1	25
Spain (EU)	6	54
Syria	1	9
Tunisia	27	555
Turkey	19	530
Total	129	2802

* Sea days defined as the time between the observer embarking and disembarking in port.

2.2.2 Deployments on Farms

Table 3: Observer coverage on farms and traps monitoring caging and harvest operations.

Farm State/CPC	Deployments (n)	Obs. days (n)
Croatia (EU)	3	167
Italy (EU)	2	69
Malta (EU)	6	271
Morocco	2	48
Spain (EU)	7	385
Tunisia	2	31
Turkey	7	174
Total	29	1145

3 Methodology for Quantifying Amount of Tuna

3.1 By Operators

3.1.1 On Purse Seiners

Three principle techniques were employed by vessels and remain unchanged from previous years:

- Those vessels equipped with acoustic fish finder were able to obtain an approximate estimate of the amount of tuna. However, anecdotal information reported by observers suggests that these were mainly deemed as indicative and vessels would rely on the following two techniques for a more accurate estimation.
- Visual estimation provided by divers from either the purse seiner or dive vessels supporting transfer operations; or
- Visual estimation from video records covering transfers between the seine and towing cage.

The scope of *potential non-compliance* reporting continued to incorporate increased requirements introduced by Recommendation 12-03 and 13-07. As a result observers were required to report those instances where the quality or coverage of the video record was insufficient to estimate the quantity of tuna (in conformity with Recommendation 14-04, Annex 8) or if there is more than 10 % of difference between the observer estimation and the vessel estimation. In addition, in these situations the observer was also not authorized to sign the ITD.

3.1.2 On Farms

Caging

Similarly, farms relied on video records of transfer operations between towing and farm cages to quantify the amount of tuna. In general, farms repeated transfers, if the quality of the initial video record was insufficient to allow an accurate estimate of tuna. These repeated transfers were performed in cooperation with national competent authorities and ROP-BFT observers and in the spirit of the regulatory framework.

All farm National Authorities have used stereoscopic camera systems at caging and the Secretariat has forwarded the results to the Consortium.

3.2 By Observers

On purse seiner operations

Observers relied on the video records of transfers to estimate the amount of tuna transferred. Estimates of incidental mortalities could be made if dead tuna became apparent as the purse seine net was hauled on-board; after the fishing operation and then upon completion of the transfer operation.

Of the 191 transfers recorded by video, the quantity of tuna was estimated by number on 178 occasions (93 %) with the ITD signed on 172 of those occasions (90% of all transfers). Estimates of weight were not possible. This rate of estimation is consistent with the trends of the last number of years, with the rate of estimation above 90% since 2013. This continued high level of observer estimation can be attributed to the introduction of minimum video standards for transfers introduced prior to the 2013 season. A breakdown by flag State is

shown below in Table 4.

Table 4 Observer estimations of quantity of BFT from at-sea transfers.

Flag State	Number of Transfers (n)	Video record of transfer taken (n)	ITD Signed	Count of BFT estimations from video record	
				By number (n)	By Weight (n)
Albania	1	1	1	1	0
Algeria	5	5	5	5	0
Croatia (EU)	47	47	45	44	0
France (EU)	22	22	19	20	0
Italy (EU)	25	25	20	23	0
Libya	14	14	11	11	0
Morocco	0	0	0	0	-
Norway	0	0	0	0	-
Spain (EU)	11	11	9	10	0
Syria	1	1	1	1	0
Tunisia	16	16	13	15	0
Turkey	49	49	48	48	0
Total	191	191	172	178	0

Observers commented that estimating the weight of fish remains impossible due to the following reasons:

- Broad range of size variability between tuna;
- Quality of the video image;
- Density of fish obstructed the view of individual fish; and
- Lack of size reference tool combined with depth of field of the image.

Observers were able to estimate the amount of fish by number in over 90% of cases for recorded transfer operations. In cases where they were not the factors that prevented a reliable estimate of the amount of tuna included:

- The density of tuna obscured individual fish and therefore prevented an accurate count; and
- Densely packed fish moving in both directions during the transfer.

Availability of video records

The original video record is retained by the towing vessel and accompanies the tuna to the receiving farm. The practice of *providing* video records to observers has improved considerably with most observers receiving copies of the videos for review in a timely fashion.

The best option remains to provide observers with a copy of the original video record immediately following transfer. This ensures there is sufficient time and better conditions to review the video several times.

Caging

A summary of observer estimations of quantity of tuna during caging operations is set out in Table 5. The same problems noted for transfers between purse seiners and towing cages at-sea were also relevant to caging operations. Observers were able to estimate by number for 83% of transfers, which resulted in 58% of ITD s being signed.

Table 5: Observer estimations of quantity of BFT during caging.

Farm State/CPC	No. Caging Ops (n)	Stereoscopic Video System (n)	ITD / ICD Signed	Count of BFT estimations from video record	
				By number (n)	By Weight (n)
Croatia (EU)	14	14	14	14	-
Italy (EU)	6	6	0	5	-
Malta (EU)	51	19	35	51	-
Morocco	4	4	4	4	
Spain (EU)	4	4	4	4	-
Tunisia	6	4	6	6	-
Turkey	11	11	11	11	-
Total	96	56	80	96	0

Harvests

During harvest operations, observers conduct monitoring activities either from the killing platform, carrier / processing vessel or on the farm premises for fresh exports or a combination, depending on where the most accurate count of tuna and weight can be recorded. In all instances of harvesting, facilities both at farms and on the carrier / processing vessels permit an accurate count of tuna removed and individual or average weight for fish harvested.

4 Potential Non Compliance Events

Observers record and report PNCs under the codes listed in Table 6 below. In the event that something happens that does not fit to a code then it will be listed as other and a description of the event recorded. For data management purposes PNC codes are divided by operation type, as such there exist certain multiple PNC codes for the same type of event but occurring in a different type of operation.

Table 6: Potential Non Compliance event description and code.

Operation Type	Potential Non Compliance Event	Code
Fishing	Observer access to communication facilities denied	FACD
Fishing	Aerial support used during searching operations	FAER
Fishing	No BFT Catch document (BCD)	FBDA
Fishing	Fishing outside designated season	FFOS
Fishing	Transfer declaration (ITD) not completed	FITN
Fishing	Landing in port	FLDP
Fishing	Dead tuna not adequately recorded in the vessel logbook	FMOR
Fishing	Observer prevented from carrying out duties	FOBS
Fishing	Observer catch estimate >10% than vessel's	FOGO
Fishing	Tuna transferred to a vessel(s) without an ICCAT number	FTNN
Fishing	Transfer conducted before receiving Authorisation	FTRA
Fishing	Pre-transfer notification not sent	FTRN
Fishing	Transshipment in port	FTRP
Fishing	Transshipment at-sea	FTRS
Fishing	Fish below minimum size transferred	FUNT
Fishing	Vessel without an ICCAT number involved in fishing operations	FVSF
Transfer	Video record of transfer did not show closing of door at the end of the transfer	TCDT
Transfer	Video record of transfers did not show date continuously	TDDT
Transfer	Video record of transfers did not show time continuously	TDTT
Transfer	Video record did not show 100% of transfer	TLTO
Transfer	Transfer not monitored by video	TNVT
Transfer	Video record of transfer did not show opening of door at the start of transfer	TODT
Transfer	Video record of transfers did not show Transfer Authorisation number at beginning or end of each video	TRAT
Transfer	Independent observer estimate of transfer amount was not possible due to video quality	TTNP
Transfer	Video record of transfer not transmitted to the observer on the fishing vessel	TTTO
Transfer	Video record of transfer not provided to the observer immediately after transfer	TVRO
Release (PS)	Video record of release did not show closing of door	RCDR
Release (PS)	Less than the correct amount of tuna released	RINR
Release (PS)	Video record did not show 100% of the release	RIVR
Release (PS)	Release not monitored by video	RNVR
Release (PS)	Video record of release did not show opening of door	RODR
Release (PS)	Tuna not released following a release order	RRLI
Release (PS)	Video record of release did not show date continuously	RVDD
Release (PS)	Video record of release did not show time continuously	RVDT
Release (PS)	Video of released tuna not provided to the observer immediately after release	RVOR
Caging	Observer access to communication facilities denied	CACD
Caging	No BFT Catch document (BCD)	CBDA

Operation Type	Potential Non Compliance Event	Code
Caging	A group BCD reference number was allocated to more than one farm cage	CCCD
Caging	Video record of transfer did not show closing of door at the end of the transfer - (Caging)	CCDN
Caging	Independent observer estimate of amount caged was not possible due to video quality	CCNP
Caging	Video record of transfers did not show date continuously	CDDT
Caging	BFT caged by a vessel(s) without an ICCAT authorisation number	CDNI
Caging	Tuna caged before Authorisation	CDPA
Caging	Tuna not released following a release order	CDRO
Caging	Video record of transfers did not show time continuously - (Caging)	CDTT
Caging	Video record did not provide 100% coverage of the transfer	CFTO
Caging	Video record of transfer not provided to the observer immediately after transfer	CFVA
Caging	A group BCD reference number was allocated to fish from more than one JFO	CJCD
Caging	Caging after 15th August	CLAT
Caging	Landing in port	CLDP
Caging	Dead tuna not adequately recorded by the farm	CMRA
Caging	Farm cage without identifiable and different reference number	CNAC
Caging	Caging Declaration (ICD) not completed	CNCR
Caging	Transfer declaration (ITD) not completed	CNDR
Caging	Video record of transfer not transmitted to the observer on the farm	CNTO
Caging	Video record of transfer not taken	CNVD
Caging	Observer prevented from carrying out duties	COBS
Caging	A group BCD reference number was allocated to caging operation > 1 day	COCD
Caging	Video record of transfer did not show opening of door at the start of transfer - (Caging)	CODN
Caging	Observer estimate more than $\pm 10\%$ different than farm's	CODO
Caging	Dead tuna during the towing operation not recorded in the ITD	CPUD
Caging	Fish not separated by JFO	CQJF
Caging	Fish not separated by flag of the catching vessel	CQUF
Caging	Fish not separated by year [of catching]	CQUY
Caging	A group BCD reference number was allocated to fish from more than one vessel outside JFO	CSCD
Caging	Video record of transfers did not show Transfer Authorisation number at beginning or end of each video	CTNM
Caging	Transshipment in unauthorised port	CTRP
Caging	Fish below minimum size caged	CUND
Caging	Less than the correct amount of tuna released	CWNA
Release (F)	Video record of transfer did not show closing of door at the end of the transfer	RCDN
Release (F)	Video record did not show 100% of the release	RFVR
Release (F)	Release not monitored by video	RMVI
Release (F)	Video record of transfer did not show opening of door at the start of transfer	RODN
Release (F)	Video of released tuna not provided to the observer immediately after release	RODV
Release (F)	Video record of release did not show date continuously	RFVD
Release (F)	Video record of release did not show time continuously	RFVT
Harvest	Observer access to communication facilities denied	HACD
Harvest	No BFT Catch document (BCD) -	HBDA
Harvest	Landing in unauthorised port	HLDP
Harvest	Observer estimate for harvested tuna 10% greater than farm's	HMSH

Operation Type	Potential Non Compliance Event	Code
Harvest	Observer prevented from taking size measurements or biological samples	HOBP
Harvest	Observer prevented from carrying out duties	HOBS
Harvest	Transshipment in unauthorised port	HTRP
Harvest	Undersize fish harvested	HUNH
Harvest	Vessel without an ICCAT number involved in operations	HVSH

As seen in Table 7 the most prevalent number of PNCs reported during the purse seine season were sent under the 'Other' category (51%). Of these 73 reports 82% related to issues regarding the vessels fishing logbook. A common issue related to logbooks this year was the recording of allocated catches by non-catching vessels on the day of catch which were subsequently revised by the catching vessel. In many cases these revisions were not communicated to the non-catching vessels which then caused confusion when printouts of the eBCDs were provided to the observers on return to shore with the quantity of catch shown on the eBCD inconsistent with that recorded in the logbook.

The most prevalent PNC reported at farms and traps was the lack of an estimation due to video quality (22%) (Table 8). In the vast majority of these cases this was due to the water quality and beyond control.

Table 7: Potential Non Compliance Events reported during the 2016 fishing season.

	Flag									TOTAL
	Algeria	Croatia (EU)	Italy (EU)	France (EU)	Libya	Spain (EU)	Syria	Tunisia	Turkey	
Other	21	12	10	0	11	3	0	11	5	73
FACD	1	0	0	0	0	0	0	0	0	1
FBDA	0	0	0	0	3	0	0	0	0	3
FITN	0	1	2	2	0	1	0	0	0	6
FMOR	0	2	1	2	0	1	0	1	0	7
FOGO	0	0	1	0	0	1	0	1	0	3
FTRS	3	0	1	0	0	0	0	0	0	4
FVSF	0	0	2	0	0	0	0	0	0	2
TCDT	0	0	0	1	0	1	1	0	10	13
TCNP	0	0	1	0	0	0	0	0	0	1
TLTO	0	0	0	1	1	0	1	0	13	16
TNVT	0	0	0	0	0	0	0	1	0	1
TODT	0	1	0	0	0	0	0	0	6	7
TRAT	0	0	0	0	0	1	0	0	0	1
TTNP	0	1	1	1	1	0	0	0	1	5
	25	17	19	7	16	8	2	14	35	143

Table 8: Potential Non Compliance events reported on farms during 2016.

	Farm State					
	Spain (EU)	Malta (EU)	Morocco	Tunisia	Italy (EU)	TOTAL
Other	4	1	0	1	3	9
CBDA	0	0	0	0	3	3
CCDN	0	5	0	1	0	6
CCNP	11	9	1	0	0	21
CFTO	0	4	0	0	0	4
CMRA	2	0	0	0	0	2
CNAC	5	0	0	0	0	5
CNCR	7	0	0	0	0	7
CNDR	0	4	0	0	0	4
CODO	2	14	0	0	0	16
CTNM	8	0	0	0	0	8
HMSH	2	0	0	0	0	2
RCDN	0	6	0	0	0	6
RODN	0	1	0	0	0	1
	41	44	1	2	6	94

5 Submission of Deployment Outputs

Article 7d) of Annex 4 Rec. 14-04 requires that observer deployment reports are submitted to the Secretariat within 20 calendar days from the end of the period of observation. Table 9 shows conformity with the submission deadline during the current and previous years reflecting continued development of the Programme. In 2016 98% submitted within 20 days and all outputs submitted no more than two days after the deadline.

Table 9: Submission of deployment outputs by implementation year.

Year	Submission date (days)	No. of Deployments (n)	% of Deployments
2010	≤ 20	36	38
	>20	57	62
2011	≤ 20	76	95
	>20	4	5
2012	≤ 20	87	100
	>20	0	0
2013	≤ 20	87	88
	>20	12	12
2014	≤ 20	100	94
	>20	7	6
2015	≤ 20	120	95
	>20	7	5
2016	≤ 20	126	98
	>20	3	2

The Consortium has previously submitted a consolidated database containing all data from year's two to five of the Programme. Year one has been excluded from this database with the agreement of the Secretariat given the differences in the data collection framework for that year compared to the other years of the programme. The data from year six and seven are maintained in a separate but compatible database to these data.

6 Scientific Monitoring and Activities

6.1 Length & weight sampling

Observers were instructed to perform length and weight sampling on all accessible bluefin tuna which had died during capture and transfer phases of the purse seine operation. A total of 634 individuals had length measurements taken with CFL taken predominately. 34 individuals had SFL, CFL and weight recorded. The Consortium received guidance that SFL should be recorded preferentially, ideally with CFL. Observers only record LD1 when it is not possible to take any other measurements.

6.2 Tagging

The GBYP outlined the research necessary for improving the scientific advice that the Committee provides to the Commission which includes a tagging and programme. ROP observers have been provided with material publicising the tagging programme, its importance and the implications for sampling during harvest operations 2015/2016.

A small number of tags were recovered by ROP observers during the 2016 fishing and caging seasons, these data have already been sent to the GBYP coordinators.

6.3 Scar tissue sampling

The SCRS/GBYP coordination group has requested ROP observers collect data that indicates bluefin tuna and smalltooth cookiecutter shark (*Isistius brasiliensis*) interactions. This activity has been conducted during the previous number of harvest seasons and will continue in to the coming season.

7 Summary and Key Outcomes

The following section provides a brief overview of the range of components covered by observer deployments and identifies the key outcomes and lesson(s) learned. Potential solutions required to deliver improvements are also introduced. The key issues are consistent with those reported last year.

Table 10: Summary of key outcomes and lessons learned.

Activity	Key Outcome	Lessons learned	Potential Solution
Disembarkation of observers from some of the Libyan fleet.	Observers without a Schengen area visa were left on standby under the operators' responsibility in Malta and Greece following a last minute change of disembarkation port.	Last minute changes of disembarkations ports create considerable expense and logistical difficulties, while introducing considerable risk in regards to fulfilling visa requirements of the port state.	The Consortium considers that the official request sent by the operator before the season must be respected as the deployment plan is based on these requests.
Quantifying weight of tuna transferred and caged using video records	Observers were unable to make an accurate estimate by weight from the video records	Alternative system than standard video system is required for observers to be able to estimate weights	Regulatory framework amended to ensure: Observer access to stereoscopic systems and other technical innovation used to estimate the weight of fish with an official protocol.
Video Tampering	It can be very difficult for an observer to determine if video footage has been tampered with cuts in the video are hidden by cross fades, this problem is most likely to occur when observers are not provided the video of the transfer directly.	Despite the introduction of minimum standards for video this still remains a weak point in the overall control of operations.	Observers are provided with the original video immediately and a full chain of custody is ensured for the video recording.
Electronic Logbook Issues	A large number of PNCs reported pertaining to logbook issues.	Knowledge of the logbook recording requirements could be improved among vessel masters. Furthermore, operating knowledge of the electronic logbook could be considerably improved in some cases. This includes most notably, navigation of the system, finding relevant records (most notably transfer authorisations), and reporting relevant details (most notably JFO records).	Improved instruction from CPC authorities to vessel masters prior to the season. Sending basic familiarisation manuals to observer coordinators prior to training so they are able to identify and record the relevant records in an electronic logbook.

Activity	Key Outcome	Lessons learned	Potential Solution
Editing electronic logbooks	Logbooks are often edited after the fact and it became apparent that observers were not informed of these changes on occasion, particularly regarding JFO records.	Improved operating system awareness is required by both the vessel and observer.	Improved instruction from CPC authorities to vessel masters prior to the season. Sending basic familiarisation manuals to observer coordinators prior to training so they are able to identify and record the relevant records in an electronic logbook.
eBCDs (caging)	eBCDs for caging operations often take up to a month or more to produce as the farm.	Despite the potential for changes to the farm estimates to be made post stereoscopic results, farms still wait for results from the CPC authorities before providing the eBCD and associated estimates to the observer for verification and validation.	Ensure observer coverage for caging deployments is flexible enough to ensure the observer remains on farm until the eBCDs are produced for verification and validation.
ITDs	Observers are sometimes not provided with the ICD/ITD to verify following caging.	Due to the delay which can occur in estimating the quantity and weight of tuna transferred, delays in issuing paperwork are often experienced. This has resulted in several observers not being shown the ICD/ITD to verify. In this case a PNC is issued at the end of the deployment if an ICD/ITD still has not been presented.	Continue with current procedure. Ensure farms understand consequences of not issuing ICD/ITDs to the observer by the end of deployment (at the latest).
eBCD system and flexibility	As delays are often experienced in the production of eBCD documents following caging, it is required that observer deployments, particularly during cagings, are flexible to ensure the observer is able to remain on the farm until such documentation is provided. However, on occasion, due to unforeseen	The eBCD system does not allow retrospective verification/validation of eBCDs if the observer leaves the farm prior to their completion. This creates extra administrative issues for other stakeholders.	Ensure observer coverage for caging deployments is flexible enough to ensure the observer remains on farm until the eBCDs are produced for verification and validation. In the event an early departure is unavoidable, develop a clear procedure / set of guidelines on eBCD verification/validation which are understood and agreed upon by all stakeholders.

Activity	Key Outcome	Lessons learned	Potential Solution
	circumstances, the observer may have to leave the farm early, thereby leaving several eBCDs unverified and/or validated.		
eBCDs (harvest)	Observers were sometimes not informed of the availability of eBCDs for verification following harvesting.	On occasion, upon entering the system, the observer would be unable to edit the eBCD as it had already been verified and validated by national authorities.	Ensure between communications between farm managers and provide access to internet to the observer, in port, in the accommodation as well as the factory office.
eBCDs (harvest)	Incidental mortalities across different days are on occasion, pooled into one harvest by the farm. As such, the date of harvest of some of the tuna is incorrect.	Following correspondence with ICCAT, such eBCDs cannot be signed and a PNC must be sent as the date of the harvest on the eBCD is incorrect.	Continue with current procedure. Ensure farms understand consequences of incorrect dates in the harvest information of eBCDs.
Caging authorisation	Caging authorisations sent to some farms did not include an authorisation number. As such, no authorisation number was included in the caging video following requirements of Rec. 14-04 para 81 and Annex 8.	This is due to some CPCs not issuing an authorisation number with the caging authorisation. Instead, the authorisation itself and ICD/ITD number is shown. As such, the ICD and eBCD are signed, if everything else meets the requirements, with a PNC sent to the CPC.	Continue with current procedure. Ensure farms understand consequences of lack of authorisation number in the video dates in the harvest information of eBCDs.
Intra farm transfers	Observers often not informed of intra farm transfers that may have occurred.	Information on the cages in the harvest section of the eBCD will differ from that in the caging section. It is understood that the observer may still sign the eBCD provided all other information is correct, and proof of authorisation of intra farm transfer from the CPC authorities is provided to the observer.	Continue with current procedure of signing BCDs provided proof of authorisation is provided. Ensure farms understand that proof of authorisation is required for the observer to sign a BCD for a harvest where the cage information differs between the caging and harvest sections.
Compensated BCDs	Farms may often harvest surplus tuna from one cage and deduct these from a BCD contained in another cage.	As a consequence, similar to above, the cage in the caging section will differ to that in the harvest section. It is understood that the observer may still sign the eBCD provided all	Continue with current procedure of signing BCDs provided proof of authorisation is provided. Ensure farms understand that proof of authorisation is required for the observer to sign a

Activity	Key Outcome	Lessons learned	Potential Solution
		other information is correct, and proof of "compensation of BCDs" from the CPC authorities is provided to the observer.	BCD for a harvest where the cage information differs between the caging and harvest sections.

8 Recommendations

The Consortium has sought to continually improve and develop the Programme over the past five years of implementation through consultation and direction with and from CPCs and the Secretariat on all technical and operational components. Recommendations for future improvements are presented below, clearly identifying the party responsible for introducing the improvements covering the general operational framework of the Programme and specific technical improvements associated with observer monitoring tasks and duties.

8.1 Consultation with CPCs

During previous years the Consortium found the consultation with CPCs and the Secretariat on operational and technical components of the Programme informative for improving the Programme and also for communicating and receiving direction on specific areas of data collection and reporting. Reintroduction of this approach expanded to include as many CPCs as feasible would be welcome in the future.

8.2 Verifying Quantity of Tuna

Equipment used by operators proven to provide reliable estimates of tuna by number and weight throughout the fishery, i.e. transfers at sea and at caging should be provided to observers in order to validate and verify control documents. This action will maintain the integrity of the programme.

8.3 Logbooks

Given the considerable number of PNCs associated with logbooks it is recommended that increased guidance be given to vessel masters by CPC authorities regarding the logbook requirements and detailed instruction regarding how to complete it. Areas that featured particularly were the incorrect application of the JFO allocation key and the requirement that the logbook be completed on a daily basis regardless of whether a fishing or transfer operation took place that day or not. Furthermore, there were some issues in some vessels with displaying the transfer authorisation number.

In addition to improved vessel master operating skills, it would be useful if CPCs could send basic guidance manuals to observers in order that they are able to readily identify the information required in the logbook.

8.4 Caging documentation (eBCDs and ICDs)

Considerable delays in production of caging paperwork (electronic and hard copies) meant that verification / validation often occurred considerable after the operation. This is thought to be due to the farm awaiting results of the stereoscopic analysis of the transfer.

As the observer compares their figures with the standard video, and that farms may potentially edit transfer amounts after the fact, it would be desirable for the farm to provide initial estimates as soon as possible to allow the observer to verify/validate the eBCD as required as soon as possible after the operation, and ensure any PNCs are raised immediately afterwards.

8.5 eBCD system operation

On occasion, it was found that CPC authorities would validate harvest information in the eBCDs before the observer was able to enter the system. This usually resulted in ICCAT requiring verification from the observer coordinator that the observer was indeed present during the harvest.

Clearly, the demands of the eBCD system requires that the observer has improved access to the system and better communication from the farm. It would appear that there are occasions when emails regarding eBCDs to be verified are being sent late or not at all, while logistical restrictions on internet access (i.e., often observers do not have internet in the accommodation) mean that there are delays in receiving this information, and/or being able to act on it.

8.6 CPC authorisations

Observer validation for cagings and specific harvests where the cage number for the caging varies from the cage number for the harvest require CPC authorisations. In the case of some cagings, CPC authorisations did not include the transfer authorisation number and as such the video record could not meet the requirements of para 81 and annex 8 of Rec. 14-04. It is suggested that specific CPCs are reminded of the requirements for caging video records.

For some harvests following intra farm transfers and BCD compensations, CPC authorisation detailing specifics of the transfer and/or BCD compensation are required as per guidance from ICCAT's panel 2. However, observers are often not presented with these details. It is recommended that specific authorisations detailing the cages and BCDs involved are issued when relevant to allow the observer to accurately verify and validate the information in the eBCD.

9 Conclusions

As in year six it was the case that observers could again consistently estimate the amount of fish transferred by number (90% of at sea transfers, 83% at caging). The key problem remains the estimation of amount of tuna by weight using standard video equipment.

To conclude, overall the ROP-BFT provides outputs which permit the Commission to assess compliance with the regulatory framework.