

---

## REVISED IOTC FORMS FOR THE PROVISION OF DETAILED INTERACTIONS WITH DRIFTING FLOATING OBJECTS

PREPARED BY: IOTC SECRETARIAT, LAST UPDATED: 13<sup>TH</sup> NOVEMBER 2023

---

### Purpose

To inform participants at the 19<sup>th</sup> Working Party on Data Collection and Statistics (WPDCS19) of the outcomes of the discussions held at the last sessions of the IOTC Working Group on FADs (WGFAD) and Working Party on Tropical Tunas (WPTT) and related to the definition of revised forms for the provision of detailed interactions with drifting floating objects (dFOBs), with a view to replace existing IOTC form 3-FA.

### Background

At its 4<sup>th</sup> and 5<sup>th</sup> sessions in May and October 2023, the WGFAD acknowledged the combined efforts from the Secretariat and a group of participating experts to identify and agree on the data elements required by the various standing IOTC Resolutions (15/02 and 19/02) that capture information that is crucial to better understand and characterise IOTC fisheries operating on dFOBs.

In addition, the WGFAD discussed about the possibility of using the [extended CECOFA classifications](#) to refer to the types of dFOBs and activities performed by vessels during their interactions with said objects, agreeing that these present a marked improvement compared to the classifications currently used in IOTC Form 3-FA.

The proposed data elements and reference classifications were eventually presented to the WPTT at its 25<sup>th</sup> session in October 2023 for acknowledgement by the group, which endorsed the list of data elements and the choice of classifications, and confirmed that current industrial fleets operating on dFOBs can (and indeed do) collect all necessary data elements within their FOB logbooks and therefore are in a position to begin providing all required information to the IOTC Secretariat through the new forms.

### Data elements by requirements

Two IOTC resolutions (15/02 and 19/02) are currently enforced that contain explicit requirements for the collection and reporting of data for fisheries operating on dFOBs by means of either support or fishing vessels.

While IOTC Resolution 15/02 mainly focuses on the reporting of catch and effort details, resolution 19/02 calls for a more specific reporting of interactions with dFOBs, including their structure and its potential environmental impact.

The distinct requirements from these resolutions can be combined to produce two distinct types of data sets summarised in the tables below.

Table 1 Data elements for the reporting of detailed dFOB activities. Elements in boldface uniquely identify a stratum

Category	Element	Requirement	Element data type	Mandatory	Notes
Vessel	<b>Vessel IOTC ID</b>	15/02 6.c, 19/02	Vessel identifier	Y	
	Type	annex 3.a.i	Dictionary entry	Y	Can be inferred
Date	<b>Year</b>	15/02 6.c.i, 19/02 annex 3.a.iii	Integer	Y	
	<b>Month</b>		Integer	Y	
	<b>Day</b>		Integer	Y	
Location	<b>Longitude</b>	15/02 6.c.i, 19/02 annex 3.a.ii	Decimal	Y	
	<b>Latitude</b>		Decimal	Y	
dFOB	<b>Identifier</b>	15/02 6.c.i, 19/02 annex 3.a.iv	Identifier	Y (when present)	
	<b>Type</b>	15/02 6.c.i, 19/02 annex 3.a.v	Dictionary entry	Y	Extended CECOFAD classif.
	<b>Activity type</b>	15/02 6.c.i, 19/02 annex 3.a.vii	Dictionary entry	Y	Extended CECOFAD classif.
dFOB raft	Is plastic present?	15/02 6.c.ii, 19/02 annex 3.a.vi	Boolean	Y (if clearly visible)	
	Is metal present?		Boolean		
	Length		Decimal		In cm
	Width		Decimal		In cm
	Height		Decimal		In cm
	Is mesh present?		Boolean		
	Mesh size		Decimal		In mm
dFOB tail	Is plastic present?	15/02 6.c.ii, 19/02 annex 3.a.vi	Boolean	Y (if clearly visible)	
	Is metal present?		Boolean		
	Length		Decimal		In cm
	Width		Decimal		In cm
	Height		Decimal		In cm
	Is mesh present?		Boolean		
	Mesh size		Decimal		In mm
Buoy	Identifier	19/02 annex 3.a.iv	Identifier	Y (if buoy present)	
	Position known	IOTC SC20	Boolean		
	Activity type	19/02 annex 3.a.vii	Dictionary entry		Extended CECOFAD classif.

**Table 1** includes the data elements describing each interaction between a vessel (both *fishing* or *supply* vessel) and a dFOBs, with clear indication of the date and location where this happened, and information on the presence of instrumented buoys and on the knowledge by the vessels of their actual location (what was initially referred to as *ownership*).

Table 2 Data elements for the reporting of aggregated dFOB catch and effort. Elements in boldface uniquely identify a stratum

Category	Element	Requirement	Element data type	Mandatory	Notes
Vessel	<b>Vessel IOTC ID</b>	19/02 annex 3.b	Vessel identifier	Y	
	Type		Dictionary entry	Y	Can be inferred
Date	<b>Year</b>	19/02 annex 3.b	Integer	Y	
	<b>Month</b>		Integer	Y	
Location	<b>1x1 grid</b>	19/02 annex 3.b	CWP grid identifier	Y	
dFOB	<b>Type</b>	15/02 6.c.i, 19/02 annex 3.a.v	Dictionary entry	Y	Extended CECOFAD classif.
	<b>Activity type</b>	15/02 6.c.i, 19/02 annex 3.a.vii	Dictionary entry	Y	Extended CECOFAD classif.
Effort	Number of activities	19/02 annex 3.b	Integer	Y	
	Number of sets	19/02 annex 3.b	Integer		Can be 0
	Data raised?	15/02 4.a	Boolean		
Catches #1	Species code	19/02 annex 3.b	ASFIS Identifier	Y (activity followed by set)	Single species
	Fate	19/02 annex 3.b	Dictionary entry		Retained / Disc.
	Catches / discards	19/02 annex 3.b	Decimal		Amount
	Unit	19/02 annex 3.b	Dictionary entry		weight or number
...	...	...	...	...	...
Catches #N	Species code	19/02 annex 3.b	ASFIS Identifier	Y (activity followed by set)	Single species
	Fate	19/02 annex 3.b	Dictionary entry		Retained / Disc.
	Catches / discards	19/02 annex 3.b	Decimal		Amount
	Unit	19/02 annex 3.b	Dictionary entry		weight number

**Table 2** includes the data elements describing a summary (by month and grid) of the interactions between a vessel and a specific type of dFOB, including the exerted effort and the results of any fishing set performed after each interaction (in terms of catches / discards by species).

The data elements contained within these two tables have different levels of spatio-temporal resolution, yet they both require the provision of the information on a vessel-by-vessel basis.

## Data reporting rationale

From the discussions held at the last IOTC WGFAD it emerged how CPCs with *industrial* fishing and supply vessels operating in the Indian Ocean might already be capturing all data elements in **Tables 1 & 2**. In fact, and based on a subset of these elements, CPCs have been compiling and submitting forms 3-FA to the Secretariat, albeit with some issues in the interpretation of dFOB activities and efforts.

Overall, the major difference between the two sets of requirements, i.e., those captured through Form 3-FA, and those described in this document, is the fact that the former report aggregated information on the interactions and catches on dFOBs at fleet level, i.e., for all vessels of a given fleet combined, while the latter are finer grained.

However, it is worth noting how:

- 1) The requirements of Res. 19/02 captured within **Tables 1 & 2** only apply to CPCs having purse seine vessels fishing on dFOBs (see Res. 19/02 para. 2)
- 2) The requirements modelled through Form 3-FA and originally stemming from Res. 15/08 also apply exclusively to CPCs having purse seine vessels fishing on dFOBs (see Res. 15/08 para. 1)
- 3) According to Res. 15/02 it remains necessary that CPCs submit a separate form 3-CE that includes catch and effort data by type of industrial fishery, and this applies also to those fisheries on dFOB-associated schools
- 4) Therefore, form 3-CE can be used to cross-verify the total effort (number of sets) and retained catches reported by the vessels participating to a specific fishery operating on dFOB-associated schools
- 5) Form 3-FA remains sub-optimal (with respect to the requirements) and should be decommissioned

## Proposed data reporting form (3-DA)

The number of activities by type and dFOB type included in **Table 2** (by vessel, date, and grid) can be derived from the higher resolution data provided through the elements listed in **Table 1**, as would be the case for the number of sets.

Therefore, even though data elements in **Table 2** have a lower spatio-temporal resolution compared to **Table 1**, it is worth combining the elements from both tables together when designing an electronic form for IOTC data reporting.

For this purpose, the IOTC Secretariat has prepared a new electronic form (Form 3-DA, described below) and is in the process of implementing an interactive data validator (as those already available for the other types of IOTC forms) to help CPCs verifying that their submissions are in agreement with the IOTC requirements.

Form 3-DA, in its *standard* form, supports the submission of data for a given vessel and month, whereas in its *multiple* form can support the submission of data for multiple vessels for a given month.

Also, form 3-DA can be used for both *fishing* and *supply* vessels, with the latter expected to only report activities such as deployment or retrieval of dFOBs and buoys, with no subsequent catch recorded.

Table 3 Comparison between current and past forms. In boldface, elements of form 3-DA that improve over 3-CE and 3-FA

Type of form	3-CE (15/02)	3-FA (15/08 and sup.)	3-DA (15/02, 19/02)
Applies to	Fishing Vessels (FV), Supply Vessels (SV)	Fishing Vessels (FV), Supply Vessels (SV)	Fishing Vessels (FV), Supply Vessels (SV)
Fleet resolution	Flag	Flag	<b>Vessel</b>
Temporal resolution	Year / month	Year / month	Year / month / <b>day</b>
Spatial resolution	CWP grid	CWP grid	<b>Coordinates</b>
dFOB types	N/A	IOTC classification	<b>Extended CECOFAD</b>
dFOB activity types	N/A	IOTC classification	<b>Extended CECOFAD</b>
dFOB data	N/A	Type, activity	Type, activity, <b>identifier</b>
Buoy activity types	N/A	N/A	<b>Extended CECOFAD</b>
Buoy data	N/A	Partial (activity, ownership)	Activity, <b>Identifier</b> , <i>ownership</i>
Effort units	Fishing days / hours, Number of sets, Days at sea (for SV only)	Number of activities, Number of sets	Number of activities, Number of sets
School type	To be explicitly provided	Implicit (dFOB associated)	Implicit (dFOB associated)
Catches (FV only)	By species retained	By species retained	By species retained / <b>discarded</b>
Catch unit (FV only)	Live weight equivalent	Live weight equivalent	Live weight equivalent / <b>numbers</b>
Data raised to totals	Yes	Yes	Yes (formally)

**Table 3** indicates how form 3-DA captures more information than what currently included in form 3-CE and 3-FA, and that form 3-CE cannot be a substitute for either of the two others.

## Conclusions

The data elements in **Tables 1 & 2** have been identified as feasible to collect (and report) by the major data providers and contribute to fulfil the requirements of multiple IOTC Resolutions that so far were not properly addressed.

The electronic data form 3-DA designed by the Secretariat and presented hereby, can capture all these elements, references well-known classifications, and provides a convenient way of reporting data to the IOTC in agreement with Res. 15/02 and 19/02.

## Data confidentiality

As the information provided through Form 3-DA has a very fine-grained resolution, its content cannot be disseminated *as is*, as it would violate one of the key principles of Res. 12/02 (*Data confidentiality policies and procedures*), i.e., that *the activity of no individual vessel should be identified within a time/area stratum*.

Considering the above, the IOTC Secretariat will publicly disseminate all future information received through Form 3-DA by duly aggregating its original records by fleet, month, and statistical grid.

## Proposed actions and recommendations

That the WPDCS:

- **ENDORSES** the structure of form 3-DA (both in its *standard* and *multiple* version), including the reference classifications adopted therein
- **ENDORSES** the decommissioning of form 3-FA
- **RECOMMENDS** that dFOB data elements as per **Table 1** and **Table 2** are exclusively provided through Form 3-DA starting with the 2024 data reporting cycle (i.e., for the statistical year 2023)
- **REQUESTS** CPCs with fisheries operating on dFOBs to report historical data to the IOTC Secretariat through form 3-DA
- **REQUESTS** the Scientific Committee to establish procedures for scientists to get access to fine-grained information provided through form 3-DA, in a similar way as what already considered for the access to instrumented buoys positions

## References

- [IOTC-2022-WGFAD03-18](#) – “*Lessons learned from the monitoring of FOB and buoy use by French and associated purse seiners in the Indian Ocean : How to avoid data gaps ? Do we need a FAD register ?*” (Maufroy A, Jehenne F, Le Couls S, Goujon M)

## External resources

- MS Excel template of [Form 3-DA \(standard\)](#)
- MS Excel template of [Form 3-DA \(multiple\)](#)
- IOTC reference data catalogue:
  - [dFOB types](#)
  - [dFOB activity types](#)
  - [buoy activity types](#)
  - [ownership](#)

## Appendices

### Appendix A.1 – metadata and data elements of form 3-DA (standard)

IOTC form 3-DA   metadata			
Form	3-DA	Version	1.0.0
<b>Submission information</b>			
<u>Focal point</u>		<u>Organization</u>	
Full name	<input type="text"/>	Name	<input type="text"/>
e-mail	<input type="text"/>	e-mail	<input type="text"/>
Finalization date	<input type="text"/>		
Submission date	<input type="text"/>		
<b>General information</b>			
Reporting year	<input type="text"/>	Reporting month	<input type="text"/>
<a href="#">Reporting entity</a>	<input type="text"/>	Vessel name	<input type="text"/>
<a href="#">Flag country</a>	<input type="text"/>	Vessel IOTC number	<input type="text"/>
<b>Data specifications</b>			
<a href="#">Type of data</a>	<input type="text"/>		
<b>Comments</b>			
<input type="text"/>			

Figure 1: metadata elements for Form 3-DA (standard)



## Appendix A.2 – metadata and data elements of form 3-DA (multiple)

IOTC form 3-DA   metadata			
Form	3-DA-multiple	Version	1.0.0
<b>Submission information</b>			
<b>Focal point</b>		<b>Organization</b>	
Full name	<input type="text"/>	Name	<input type="text"/>
e-mail	<input type="text"/>	e-mail	<input type="text"/>
Finalization date	<input type="text"/>		
Submission date	<input type="text"/>		
<b>General information</b>			
Reporting year	<input type="text"/>	Reporting month	<input type="text"/>
Reporting entity	<input type="text"/>		
Flag country	<input type="text"/>		
<b>Data specifications</b>			
Type of data	<input type="text"/>		
<b>Comments</b>			
<input type="text"/>			

Figure 3: metadata elements for Form 3-DA (multiple)





## Appendix B: extended CECOFAD classifications

Table 4 [Types of dFOBs](#)

Code	English description
ANLOG	Natural log of animal origin
DFAD	Drifting FAD
FALOG	Artificial log resulting from human activity (and related to fishing activities)
HALOG	Artificial log resulting from human activity (not related to fishing activities)
VNLOG	Natural log of plant origin

Table 5 [Types of activities on dFOBs](#)

Code	English description
CO	Consolidation
DE	Deployment
EU	End of use
LO	Loss
RE	Retrieval
ST	Stranding
VF	Visit with fishing
VI	Visit without fishing

Table 6 [Types of activities on buoys](#)

Code	English description
DE	Deployment
EU	End of use
LO	Loss
RE	Retrieval
ST	Stranding
TR	Transfer

## Appendix C: other classifications

Table 7 [Types of ownership](#)

Code	English description
NO	Vessel does not have access to the position of the buoy
OW	Vessel has access to the position of the buoy