

Comisión Interamericana del Atún Tropical  
Inter-American Tropical Tuna Commission



**Proposed Options for Data Reporting of Dorado (in response to Resolution C-23-09): SAC-15 INF-R**

Leanne Fuller, Juan Valero, Jon Lopez, Shane Griffiths, Salvador Siu, Sylvain Caillot, Joydelee Marrow, Brad Wiley, and Alexandre Aires-da-Silva

**15ª Reunión del Comité Científico Asesor - 10-14 de junio de 2024**  
**15<sup>th</sup> Meeting of the Scientific Advisory Committee – 10-14 June 2024**  
**La Jolla, California, USA–EE.UU.**

# Outline

- Background
- Objectives
- Review data reporting requirements ([C-03-05](#))
- Data needs for C-23-09
- Proposal for data reporting mechanisms

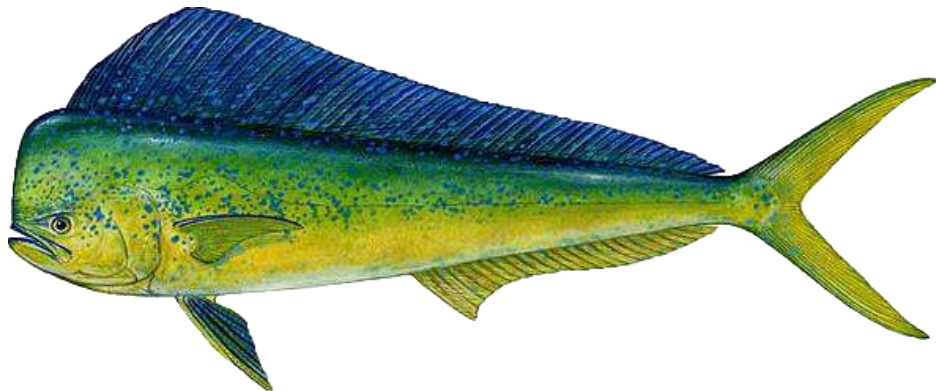


Photo credit: Diane Peebles

## INTER-AMERICAN TROPICAL TUNA COMMISSION

### 101<sup>st</sup> MEETING

Victoria, B.C., Canada  
7-11 August 2023

#### RESOLUTION C-23-09

#### RESEARCH FOR THE MANAGEMENT OF DOLPHINFISH (DORADO) (*Coryphaena hippurus*)

*The Inter-American Tropical Tuna Commission (IATTC), on the occasion of its 101<sup>st</sup> Meeting:*

*Recognizing that the fish stocks covered by the Convention are understood to be the stocks of tunas and tuna-like species and other species of fish taken by vessels fishing for tunas and tuna-like species in the Convention Area;*

*Bearing in mind that Article VII, paragraph 1 (f) of the Antigua Convention establishes that the Commission shall "adopt, as necessary, conservation and management measures and recommendations for species belonging to the same ecosystem and that are affected by fishing for, or dependent on or associated with, the fish stocks covered by this Convention, with a view to maintaining or restoring populations of such species above levels at which their reproduction may become seriously threatened";*

*Reaffirming the obligations contained in the Antigua Convention, Article VII 1 (a) and (i), the Commission shall adopt, "standards for collection, verification, and timely exchange and reporting of data concerning the fisheries for fish stocks covered by this Convention" and shall establish "a comprehensive program for data collection";*

*Recognizing that Dolphinfish (*Coryphaena hippurus*) is a specie targeted by artisanal and industrial longline fisheries by several CPCs amounting to 98% of the catches in the EPO; and incidentally caught by vessels using purse-seine gear operating in the Convention Area estimated at 2% of total catches of this species; and is within the fish stocks of interest to the Commission;*

*Recalling that collaborative research with the IATTC in 2014-2016 showed that the data available for the Eastern Pacific Ocean (EPO) south were sufficient to conduct an exploratory assessment of the core Dolphinfish stock and management strategies, however, information from the EPO north was found to be limited;*

*Recalling that the IATTC has provided the opportunity for collaborative research, including three technical meetings on the *Coryphaena hippurus* resource between 2014 and 2016; the development of an exploratory assessment of the *C. hippurus* stock in the "core" region; an exploratory management strategy evaluation (MSE) for the EPO south; and an evaluation of potential reference points and harvest control rules for *C. hippurus* in the EPO;*

*Taking into account that, in its 10<sup>th</sup> meeting, the Scientific Advisory Committee recommended that the IATTC staff continue working with CPCs on research in relation to the stock status of Dolphinfish (*Coryphaena hippurus*) in the Convention Area;*

*Further noting that, at the 12<sup>th</sup> meeting of the Scientific Advisory Committee, the SAC recommended that the Commission encourage Members participating directly or indirectly, as flag States or coastal States, in the Dolphinfish fishery to consider assessing and managing the Dolphinfish stock.*



# Background

- Mandates of the Resolution ([C-23-09](#))
  - CPCs: collect & submit to IATTC biological, catch & interaction data for dorado
  - Staff: develop proposal to standardize format for data reporting
  - Staff: update the dorado assessment and recommendations on Harvest Control Rules
  - SAC: recommend to the Commission creation of a voluntary working group to identify data gaps

INTER-AMERICAN TROPICAL TUNA COMMISSION

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Victoria, B.C., Canada  
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RESOLUTION C-23-09

RESEARCH FOR THE MANAGEMENT OF DOLPHINFISH (DORADO)

(*Coryphaena hippurus*)

*Resolves as follows:*

1. **Members and Cooperating non-Members (CPCs)**

CPCs shall collect and submit to the IATTC biological, catch and interaction data, as well as fishing effort data relating to Dolphinfish from their fishing fleets whose catch of this species constitutes more than 5% of their entire annual catch. CPCs are encouraged to collect and submit data from other fleets, where available. This information shall be submitted by 30 June (beginning in 2024) as part of annual catch reporting in accordance with Resolution C-03-05. Artisanal and recreational fleet data may be reported as total annual catches without data on fishing effort in accordance with Resolution C-03-05.

2. **IATTC scientific staff**

- a) The IATTC scientific staff will develop a proposal to standardize the format for data reporting and present it at the meeting of the Scientific Advisory Committee in 2024. This format will be used by the CPCs to submit the information according to paragraph 1.
- b) Based on the data received from the CPCs and considering the human and financial resources available, the IATTC scientific staff will:
  - i. Update, to the extent possible, the stock assessment for Dolphinfish that was conducted by IATTC staff between 2012 and 2016 and present it to the Scientific Advisory Committee in 2026.
  - ii. As appropriate, update the recommendations for CPCs on harvest control rules for the Dolphinfish longline fishery, during the 2026 Scientific Advisory Committee.

3. **Review**

In 2024, SAC should consider and recommend the Commission as appropriate, the creation of a voluntary group to identify the information available on the Dolphinfish (*Coryphaena hippurus*) resource in the various fisheries of interest to the IATTC. It should also identify information gaps that must be solved to know the status of this resource, either as target or bycatch, and possibly recommend management measures.

This Resolution shall be reviewed by the scientific staff and at the meeting of the SAC in 2026, to evaluate the adequacy of the measures of this Resolution and provide a recommendation to the Commission.



# Objectives

- Address paragraph 2a) of C-23-09
  - Provide proposal for standardizing the data reporting format
  - Resolution [C-03-05](#): ‘umbrella’ resolution on data provision and technical [specifications](#)
  - Build upon previous work related to improving [C-03-05](#) (see [SAC-12-09](#), [WSDAT-01-01](#), [SAC-14 INF-Q](#))
  - Requirements under C-03-05 should be considered in proposals for standardizing format of data reporting

INTER-AMERICAN TROPICAL TUNA COMMISSION

101<sup>st</sup> MEETING

Victoria, B.C., Canada  
7-11 August 2023

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(*Coryphaena hippurus*)

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This Resolution shall be reviewed by the scientific staff and at the meeting of the SAC in 2026, to evaluate the adequacy of the measures of this Resolution and provide a recommendation to the Commission.



# Review: Data Reporting Requirements, Resolution C-03-05

- Resolution [C-03-05](#): Data Provision

- “ensure all pertinent catch information is provided on an annual basis, for all vessels fishing for species under the purview of the Commission”
  - “data be provided, by species and fishing gear” (noting different levels of catch and effort and length frequency data)
  - artisanal and recreational fleet data may be reported as total annual catches without data on fishing effort

INTER-AMERICAN TROPICAL TUNA COMMISSION  
COMISIÓN INTERAMERICANA DEL ATÚN TROPICAL

70<sup>a</sup> REUNION - 70<sup>th</sup> MEETING

ANTIGUA (GUATEMALA)  
24-27 JUN 2003

RESOLUTION C-03-05

RESOLUTION ON DATA PROVISION

*The Inter-American Tropical Tuna Commission (IATTC):*

*Emphasizing* the importance of obtaining comprehensive information on the catches, and related information, by all vessels fishing for species under the purview of the Commission;

*Understanding* that all member nations of the Commission are obliged to provide information on catches by all of their vessels fishing for any species under the purview of the Commission;

*Aware* of the long-standing and well-established practice of vessels fishing in the EPO providing catch information to the Director;

*Noting* that nations not members of the Commission which are fishing in the region are obliged under international law to cooperate with the Commission, and that the provision of catch data is one aspect of such cooperation;

*Concerned* that the Director is not receiving all pertinent catch information;

*Therefore recommends to the High Contracting Parties that:*

- Through the appropriate government authorities and in collaboration with those authorities, they take the necessary steps to ensure that all pertinent catch information is provided to the Director on an annual basis, for all of their vessels fishing for species under the purview of the Commission.
- The data be provided, by species and fishing gear, where practical, via vessel logbooks and unloading records, and otherwise in aggregated form as in the following table, with Level 3 catch and effort data as a minimum requirement, and, whenever possible, Levels 2 and 1 catch and effort data and length-frequency data.

Category	Level	Resolution	Data
Catch and effort	1	Set-by-set, logbook data with information on gear configuration and target species	Total catch in numbers, and weight if available; fishing effort
	2	1°x1°-month, with information on gear configuration and target species	
	3	5°x5°-month, with information on gear configuration and target species	
Length frequency	1	Set position, start or end of set	Length or weight of individual fish
	2	Grid position, best possible spatial-temporal resolution of area of capture	

- The aggregated data referred to in paragraph 2 for each year shall be provided by 30 June of the following year.
- The technical aspects of the data to be supplied shall be established by the Director in collaboration with scientists of the members.



# Review: Data Reporting Requirements, Resolution C-03-05

- Technical [specifications](#) pursuant to [C-03-05](#)
- Paragraph 2 “REQUIRED DATA”
  - TASK I Catch Statistics:
    - gross annual removals *and* disposition
    - tuna and tuna-like species *and* other species
  - TASK I Effort Statistics
    - Number of fishing vessels, by gear, year
- Highly summarized data

## SPECIFICATIONS FOR DATA PROVISION

- The technical aspects for data that are compiled and maintained by the IATTC on species under its purview have been established by the Director in accordance with Resolutions [C-03-05](#)<sup>1</sup> on data provision and [C-04-05](#) on bycatch.
2. **REQUIRED DATA**
- The specifications are presented below in expanded form, using a format and terminology generally consistent with those used by ICCAT, IOTC, FAO, and other fisheries bodies handling tuna fisheries statistics.
- 2.1. **TASK I CATCH STATISTICS:** Gross annual removals<sup>3</sup> (round weight of all fish caught or killed during fishing operations) and disposition (retained or discarded) of tuna and tuna-like species (Table 1), and other species (Table 2) taken in fisheries which capture tuna and tuna-like species in the Antigua Convention Area. If the data provided are nominal catches<sup>1</sup> (round weight of retained catch when there is no information on discards), please note this when providing the data.
- These catch data should be reported as round weight, in metric tons or in kilograms, by species, by year, gear and disposition (retained or discarded). If the round weights are estimated by conversion from processed or sampled weights or measurements, or by some other means, the method and the sample data used to obtain the estimates should be provided.
- 2.2. **TASK I EFFORT STATISTICS: Fishing power (fleet) statistics.** The number of fishing vessels by gear, operating in the Antigua Convention Area in each calendar year should be reported.

<sup>1</sup> For the full texts of the resolutions cited, see <http://www.iatcc.org/ResolutionsActiveENG.htm>

<sup>2</sup> <https://www.iatcc.org/images/WebPics/EPOMap.jpg>

<sup>3</sup> <https://www.fao.org/3/bt981t/bt981t.pdf>

# Review: Data Reporting Requirements, Resolution C-03-05

- Technical [specifications](#) pursuant to [C-03-05](#)
- Paragraph 2 “REQUIRED DATA”
  - TASK II Catch Statistics:
    - gross removals *and* disposition for each species
    - spatially explicit (based on level of reporting)
  - TASK II Effort Statistics
    - Associated fishing effort
- Levels of data reporting
  - Level 1: Operational (logbook) data
  - Level 2: 1°x1° -month aggregated data
  - Level 3: 5°x5° -month aggregated data
  - note raised & unraised options: levels 2&3
- Catch-at-size data

## SPECIFICATIONS FOR DATA PROVISION

**2.3. TASK II CATCH AND EFFORT STATISTICS:** Catch and effort statistics by area, gear, and species. Gross removals and disposition (retained or discarded) for each species, and the associated fishing effort, should be reported at the finest possible level of resolution as noted below, in metric tons or in kilograms. If the data provided are nominal catches, please note this when providing the data. If the round weights are estimated by conversion from processed or sampled weights or measurements, or by some other means, the method and the sample data used to obtain the estimates should be provided.

**2.3.1. Level 1.** Operational (logbook) data: The IATTC staff collects operational data directly from the majority of purse-seine (PS) and pole-and-line (LP) vessels that fish for tunas in the Convention Area.

The information that should be reported includes details of starting and ending position of sets, time gear set and retrieved, and other data which are specific to each gear and affect its efficiency, such as gear configuration (including, for longlines, total number of hooks fished, number of branch lines between floats, use of lightsticks, *etc.*), use of FADs or aircraft, and hook type. The catch for each operation should be reported by species, in both numbers and weight if available. Estimates of coverage rates by gear should be provided.

A list of gears other than PS and LP commonly encountered in the Convention Area, and associated codes and measures of effort, is given in Table 3.

**2.3.2. Level 2.** 1°x1°-month aggregated data

**2.3.3. Level 3.** 5°x5°-month aggregated data

**2.3.4.** For Level 2 and Level 3 data, there are two options for provision of data to the Commission. In either case, the data should be developed, whenever possible, from logbook and unloading data, and the method should be fully documented.

### **2.3.4.1. Raised option:**

The total number of vessels operating in a time-area stratum should be reported. The total number of operations of gear made in an time-area stratum should be provided by gear-configuration stratum, with associated gross removals (or nominal catch, if information on discards is not available) by species, in both numbers and round weight, if available. In this option, summarized logbook and landing data (the sample data) are used to develop estimates that are then raised to totals. The coverage rates, and detailed descriptions and calculations for the method used to obtain the estimates of total catch and effort by strata are to be provided.

### **2.3.4.2. Unraised option:**

The data from logbook and unloading records are summarized to provide sample statistics of fishing effort and catch by species in numbers of fish and round weight, within area-time-gear configuration strata, as discussed in 2.3.4.1 Raised Option. The number of individual vessels from which the observations were obtained in an area-time stratum are also reported. Estimates of the total number of vessels operating by area, and of total catch by area-time, should be provided in as much detail as possible, if available.

**2.4. CATCH-AT-SIZE DATA:** Lengths and weights of individual tunas and tuna-like fishes in the catch should be provided at the highest spatial-temporal resolution possible (*i.e.* Level 1 if known). Type of measurement and condition of the fish should be noted for each measurement. When catch and effort data are reported at Level 2 or 3, catch-at-size data should be reported by gear, area, and month as well, if possible. In all cases, catch-at-size data should be reported at the finest resolution possible. Details of the design of the sampling program should be provided.



# Data Needs for Dorado (pursuant to C-23-09)

- C-03-05 provides a baseline for describing data reporting requirements
- C-23-09 offers an opportunity to
  - expand upon previous work on C-03-05 (see [SAC-12-09](#), [WSDAT-01-01](#), [SAC-14 INF-Q](#))
  - improve recommendations for updating C-03-05
- Small-scale coastal ('Artisanal') longline fisheries contribute most to total catch of dorado in the region
  - C-23-09 states *“artisanal and recreational fleet data may be reported as total annual catches without data on fishing effort”*
  - Data improvement workshop has not yet been conducted for 'artisanal' fisheries
  - C-23-09, Paragraph 2b: asks staff to update the stock assessment for dorado
  - Operational-level (i.e., set-by-set) data are critical for reliably assessing stock status (Level 1 data)
  - Some CPCs already collect these data
- Draft list of recommended data fields facilitates a 1<sup>st</sup> step in proposing a standardized data reporting format



# Proposal for Data Reporting Mechanisms

The staff offer the following proposed options for data reporting:

- a. standards, guidelines and templates for mandatory data fields, to allow CPCs to submit data in their preferred format (e.g., csv, xls) so long as they follow these templates (e.g., Table 1)
- b. Fixed-field digital templates available in Excel
- c. Online forms and e-reporting apps in the longer term as reporting frequency increases

- Options are similar to those proposed in [WSDAT-01-01](#) and [SAC-14 INF-Q](#)
- All options aim to ease the data reporting burden on CPCs
- Option (a):
  - Data submission is somewhat flexible
  - Staff create a template of data fields (e.g., Table 1)
  - CPCs submit data in their preferred format (e.g., csv or xls), so long as they follow the template
  - Staff develop programmed scripts to add data to IATTC database tables
  - May be potentially desirable for CPCs with data collection programs underway

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- c. Online forms and e-reporting apps in the longer term as reporting frequency increases

- Option (b):

- Staff seek to improve data reporting in the short-to-mid-term
- Development of fixed-field digital templates would be created in Excel
  - (similar to those used by [ICCAT](#) and [IOTC](#) but adapted to suit IATTC data requirements)
- May be potentially desirable for CPCs initiating a new data collection program

# Proposal for Data Reporting Mechanisms

- Option (b): Development of fixed-field digital templates would be created in Excel
  - ICCAT Example

TASK 1 - FLEET CHARACTERISTICS											Version	Language									
ICCAT: INTERNATIONAL COMMISSION FOR THE CONSERVATION OF ATLANTIC TUNAS											2022a	ENG									
<b>Statistical correspondent</b> <span style="float: right;">inc</span>											<b>Secretariat use only</b>										
<b>Identification</b>					<b>Affiliation</b>					<b>Filtering criteria</b>											
Name					E-mail					Date reported											
Phone					Institution					Reference N°											
Department					Address					id											
Country					File name (proposed)					a) 0 0											
										b) 0 0											
										c) 0 0											
										d)											
<b>Data set characteristics</b> <span style="float: right;">inc</span>											Notes										
<b>Reporting Flag</b>					<b>Sub-form / Description</b>																
Years covered (from) (to)					ST01A (by Vessel) Individual fishing vessels with positive effort (active) in any of the ICCAT fisheries																
Version reported					ST01B (by Fleet) SMALL SCALE (LOA <20 m) active fishing vessels ONLY: fleet component summaries not fishing for BFT-E or SWO-M																
Content (data)					OPTIONAL																
<b>Vessel attributes</b>											<b>Vessel activity in ICCAT Fisheries</b>										
<b>Vessel ID</b>											<b>Period</b>		<b>Total effort (OPTIONAL)</b>		<b>Fisheries (activity, 1 or +)</b>					<b>BTE fishery only (d)</b>	
ICCAT Serial Number	Nat. Registry N° (NRN)	Internat. RCS	Vessel name (latin)	Flag of Vessel (cod)	Base port/zone	Gear group (cod)	LOA (m)	Tonnage (t)	Tonnage type	Year (calendar)	Fishing days (ATL)	Fishing days (MED)	Fishery 1 (cod)	Fishery 2 (cod)	Fishery 3 (cod)	Fishery 4 (cod)	Fishery 5 (cod)	Authorised FROM	Auth TO		
ICCATSerialNo	NatRegNo	IRCS	VesselName	FlagVesCd	PortZone	GearGrpCd	LOAm	Tnage	TonType	YearC	FishDat	FishDme	Fishery1C	Fishery2C	Fishery3C	Fishery4C	Fishery5C	DtAuthFro	DtAuthTo		
													ALBN								
													ALBS								
													ALBM								
													SWON								
													SWOS								
													TROP								
													BFTW								
													SMTuna								



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- b. Fixed-field digital templates available in Excel
- c. Online forms and e-reporting apps in the longer term as reporting frequency increases

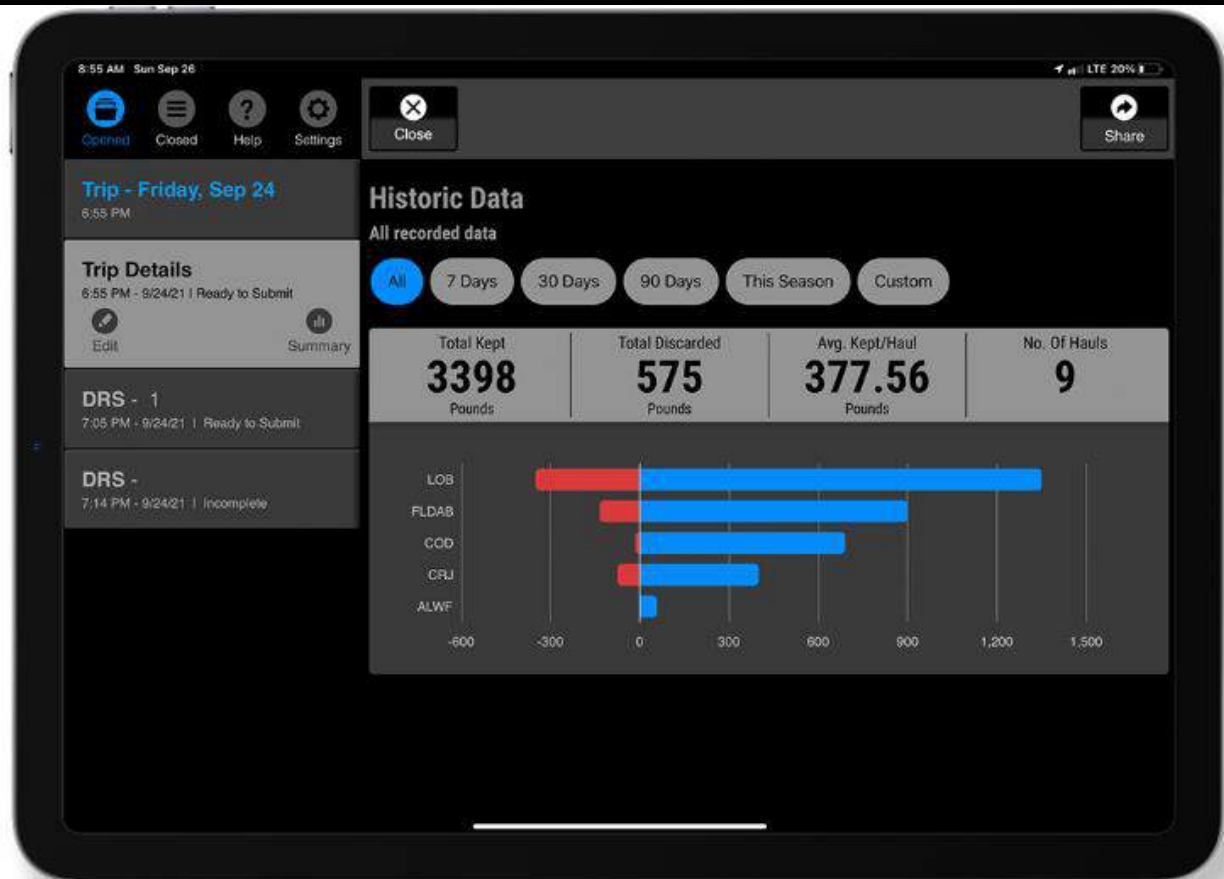
- Option (c):

- Staff exploration of options for developing online forms and electronic reporting apps
- Allows for:
  - Automated workflow
  - Timely collection of data
  - Application of automatic quality controls
  - Sending of data to final repository in near-real time
- High initial cost (staff training, purchasing and maintenance of electronic devices)
- May be potentially desirable as the periodicity and volume of data reporting increases

# Proposal for Data Reporting Mechanisms

- Option (c): Staff exploration of options for developing online forms and electronic reporting apps

The electronic logbook is a wheelhouse essential. Just like a radar or chartplotter. Deckhand is the only logbook designed for fishermen.



View collected data.

All your data at your fingertips, all the time. Monitor catch totals in real time as you work.

<https://deckhandlogbook.com/product/>

# Proposed template of data fields: trip-level information

- For each option, a list of data fields is needed
  - Encourage CPCs to provide feedback (voluntary WG, C-23-09 Para 3)
- Adapted from [SAC-14 INF-Q](#)
- Addresses artisanal vessels
- Example of recommended fields to facilitate dorado stock assessment
- Focus on operational level 1 data
- Field list may evolve over time
- Level 2 & 3 data should also be considered in reporting formats

**TABLE 1.** Recommended template of data fields (vessel and gear characteristics and operational-level logbook) for longline vessels proposed to be collected and submitted by individual CPCs to IATTC to facilitate an updated stock assessment for dorado, as tasked in Resolution [C-23-09](#). 1a: provides metadata fields for vessel, gear characteristics; and trip-level gear information; 1b: set-level information, set-level catch information, and set-level size composition data. Table is adapted from [SAC-14 INF-Q](#).

1a. Trip-level information

Data Type	IATTC proposed logbook fields
Vessel and gear characteristics	Flag (Vessel flag abbreviation)
	Unique Vessel Identifiers:
	Vessel name
	IMO (International Identification IMO number) (if available)
	IATTC Vessel number (IATTC Vessel register number assigned to all vessels)
	Length overall (Length of the vessel (meters))
	Gross tonnage (Vessel Gross Registered Tonnage) per <a href="#">C-18-06</a>
	Type of vessel: artisanal ( ), mediana ( ), avanzada ( ), fibra ( ), nodriza ( ), industrial ( ), other (specify). Check appropriate box
	If vessel type is nodriza: provide the number of fibras
	Vessel electronics:
	Radar equipped (Y/N)
	Echo sounder (Y/N)
	Global Positioning System (GPS) (Y/N)
	Sea Surface Temperature (SST) gauge (Y/N)
Search light Sonar (Y/N)	
Omnidirectional Sonar (Y/N)	
Radio/ Satellite Buoys (Y/N)	
Acoustic Doppler Current Meter (Y/N)	
Expendable Bathythermograph (XBT) (Y/N)	
Satellite imagery, remote sensing and modelling information service (e.g., fisheries oceanography analysis) (Y/N)	
Other (specify) _____	
Refrigeration type: ( ) blast freezer, ( ) refrigerated sea water, ( ) ice, ( ) other _____	
Mainline material (Record the material among multiple options: Nylon monofilament, Nylon multifilament, Natural material, Polyester, Polyethylene, Glass filament, Other (Specify))	
Branch line material(s) (Record the material of the branchline. A branch line can consist of one type of material like monofilament, or it can be made up of many different materials like braided nylon wire trace and mono filament, etc.)	
Trip-characteristics	Departure Date (Date and time the vessel departs from port (MM- DD -YYYY))
	Departure Port (Name of the port of departure or transshipment (if ports are close to the IATTC regional offices, the logbook information could complement port sampling in the future))
	Return Date (Date and time of vessel's return to port at the completion of its trip (DD-MM-YYYY-hh:mm))
	Arrival Port (Name of the port of arrival or transshipment (if the ports are close to the IATTC regional offices, the logbook information could complement port sampling in the future))
	Was a qualified observer onboard (Y/N)

# Proposed template of data fields: set-level information

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## 1b. Set-by-set information

Data Type	For each set
Set-level information	Target species or target species groups
	DateTime beginning of daily fishing activities: UTC and vessel operational time (to be able to do time conversions)
	DateTime of set start (Record the date and time of the start of the set) <sup>1</sup>
	DateTime of set end (Record the date and time of the end of the set) <sup>1</sup>
	DateTime of haul start (Record the date and time the first buoy of the mainline is hauled from the water to start the haul) <sup>1</sup>
	DateTime of haul end (Record the date and time the last buoy of the mainline is hauled from the water to end the haul) <sup>1</sup>
	Haul direction (Record whether the haul was from 1=Start to finish or 2=Finish to start)
	Latitude and longitude at start of set <sup>2,3</sup>
	Latitude and longitude at end of set <sup>2,3</sup>
	Latitude and longitude at haul start <sup>2,3</sup>
	Latitude and longitude at haul end <sup>2,3</sup>
	Wire trace (For each set indicate whether wire trace was used: 0 (no wire trace used); 1 ("SOME LINES", e.g., the vessel used wire traces on certain branch line positions during the set); 2 ("ALL LINES", e.g., wire traces were used on all lines during the set))
	Use of shark line (a hook attached to the float or at the float line)
	Number of hooks in the set (Total number of hooks in each set)
	Number of hooks between floats
	Float line length (meters) (Length of the line that is attached to the floats)
	Branch line length (meters) (Length of the branch line)
	Was a shooter used? (Y/N)
	If yes, Line shooter speed (Line shooter speed (meters/second))
	Vessel speed (Vessel speed when setting (knots)) (OPTIONAL ONLY IF NO POSITIONS)
	Hook type (For each set, record the type of hook or hooks used using the IATTC hook code from the hook manual)
	Line shooter speed (Line shooter speed (meters/second))
	Hook size (For each set, record the size of the hooks used)
Bait type (Predominant bait used e.g., fish, squid, artificial)	
Blue dyed bait used (Was the bait dyed blue? (Y/N))	
Number of light sticks (Record the number of light sticks used)	
Depth type: Shallow (<150 m) ( ) or Deep (>150 m) ( ). Check appropriate box	
Catch data	Species: Provide the ASFIS species code and the scientific name for each species taken in the set
	Catch number: Provide the total number of fish (by species) (Total number of fish caught of each listed species)
	Catch weight: Provide the total weight (by species <sup>4</sup> ) (Total weight <sup>5</sup> nearest kg) of fish caught
	Discarded/Released number (PROVIDE the NUMBER of this species DISCARDED or RELEASED)
	If Discarded/Released provide number of fish by FATE type: alive ( ), injured ( ), dead ( ), unknown ( ). Check appropriate box
Size and sex information for individual fish	If length (cm), weight (kg) or sex (male, female, unknown) data from individual fish are collected for a set, provide this information associated with the set information

# Staff Recommendations

Mechanisms for data provision:

The staff offer the following proposed options for data reporting:

- a. standards, guidelines and templates for mandatory data fields, to allow CPCs to submit data in their preferred format (e.g., csv, xls) so long as they follow these templates (e.g., Table 1)
- b. Fixed-field digital templates available in Excel
- c. Online forms and e-reporting apps in the longer term as reporting frequency increases

Creation of a voluntary working group on dorado (C-23-09, Para 3) to review data fields and templates and to determine time frames for development of options b and c





Questions