



Food and Agriculture
Organization of the
United Nations



Indian Ocean Tuna Commission
Commission des Thons de l'Océan Indien

IOTC Catch Documentation Scheme

Strategy Companion

Version 1.0

Contents

Abbreviations.....	iii
DEFINITIONS.....	iv
Preamble.....	v
1. Objective.....	1
2. Reference Documents and Schemes.....	1
3. Basic design.....	2
3.1. Basic CDS design options 1-3.....	2
3.2. Species Tropical tunas (bigeye tuna, yellowfin tuna and skipjack tuna), then other IOTC species step by step.....	7
3.2.1. Stock status.....	7
3.2.2. IUU Risk.....	8
3.2.3. Level of international trade.....	9
3.2.4. Difficulty in implementation and any other factor.....	10
3.2.5. Choice of species.....	11
3.3. Design of an electronic system.....	12
3.4. Need for special consideration to artisanal fleets.....	16
4. Operational and administrative issues.....	19
4.1. Resources.....	19
4.1.1. Financial aspects of the IOTC.....	19
4.1.2. Capacity building & training programmes.....	19
4.1.3. Associated costs.....	20
4.2. Operational issues, roles and responsibilities and international law.....	22
4.3. Opportunities to utilize emerging technology.....	23
4.4. The integration of CDS with the monitoring, control and surveillance and management framework of the IOTC, other data reporting obligations and programs.....	24
5. Timeline.....	25
Bibliography.....	26
Annex 1 Difficulty: Ratio of catch by artisanal fleet.....	27
Annex 2 Difficulty: catch volume in the Indian Ocean.....	30

Annex 3	Difficulty: gear composition	31
Annex 4	Resolution yy/xx electronic Catch Documentation Scheme for Tuna (2019 - version 1) .	34
Annex 5	IOTC expenditure in 2021, & budgets 2022 to 2024 (latter indicative).....	47
Annex 6	eCDS project implementation: time and cost.....	48
Table 1	Stock status: Bigeye, Skipjack and Yellowfin.....	8
Table 2	Degree of unreported catch: Bigeye, Skipjack and Yellowfin	8
Table 3	Level of international trade: Bigeye, Skipjack and Yellowfin	10
Table 4	Summary table of difficulty in implementation	11
Table 5	Eight commercially-important species affected by and driving IUU fishing.....	12
Table 6	Qualifications and exemptions expressed by CPCs.....	18
Figure 1	Differences in the existing CDS by species/fishery, product flows and inclusivity	6
Figure 2	The relationship between the estimate catch certificate, the verified catch certificate, and the trade certificate	15

ABBREVIATIONS

AUD	Australian dollar
CCS	Catch Certification Scheme (of the European Union)
CCSBT	Commission for the Conservation of Southern Bluefin Tuna
CDS	catch documentation scheme
CDSWG	CDS Working Group (of the IOTC)
CPC	IOTC Contracting Party (or “Member”) and Cooperating Non-Contracting Party
eCDS	electronic catch documentation scheme
EEZ	exclusive economic zone
EUR	euro
FAO	Food and Agriculture Organization of the United Nations
FCC	full catch certificate
FS	flag State
f.v.	fishing vessel
GT	gross tonnage
IATTC	Inter-American Tropical Tuna Commission
ICCAT	International Convention for the Conservation of Atlantic Tunas
IPOA	international plan of action
IOTC	Indian Ocean Tuna Commission
IUU	illegal, unreported and unregulated (fishing)
JPY	Japanese yen
KDE	key data element
LL	longline
LOA	length overall
MCS	monitoring, control and surveillance
NEI	not elsewhere indicated
nm	nautical mile
PRIOTC	performance review of the IOTC
PS	purse seine
RFMO	regional fisheries management organisation
SCC	simplified catch certificate
t	metric tonne
t-RFMO	tuna regional fisheries management organisation
TAC	total allowable catch
TDS	trade documentation scheme
UNGA	United Nations General Assembly
USD	United States dollar
WCPFC	Western and Central Pacific Fisheries Commission

DEFINITIONS¹

“Catch Documentation Scheme”, means a system with the primary purpose of helping determine throughout the supply chain whether fish originate from catches taken consistent with applicable national, regional and international conservation and management measures, established in accordance with relevant international obligations, hereinafter referred to as “CDS”.

“Catch certificate” means an official document accompanying a consignment and validated by the competent authority, allowing accurate and verifiable information concerning fish passing through the supply chain.

“Fish” means all species of wild capture living aquatic resources, whether processed or not.

“Consignment” means fish, which are either sent simultaneously from one exporter to one consignee or covered by a single transport document covering their shipment from the exporter to the consignee.

“Fishing vessel” means any vessel of any size used for, equipped for use for, or intended for use for the purposes of fishing or fishing-related activities, including support vessels, fish-processing vessels, vessels engaged in transshipment and carrier vessels equipped for the transportation of fishery products, except container vessels

“Illegal, unreported and unregulated fishing” means the activities set out in paragraph 3 of the 2001 FAO International Plan of Action to Prevent, Deter and Eliminate Illegal, Unreported and Unregulated Fishing, and in IOTC Resolution 18/03 On Establishing a List of Vessels Presumed to have Carried Out Illegal, Unreported and Unregulated Fishing in the IOTC Area of Competence.²

“Landing” means the initial movement of fish from a vessel to dockside in a port or free-trade zone, even if subsequently transferred to another vessel. The offload or transfer in port of fish from a vessel to a container is a landing.

“Regional fisheries management organization” means an intergovernmental fisheries organization or arrangement, as appropriate, that has the competence to establish fishery conservation and management measures, hereinafter referred to as “RFMO/A.”

“Supply chain” means a sequence of processes involved in the production and distribution of fish from catch to the point of import in the end market, including events such as landing, transshipments, re-export, processing, and transport.

“Trade certification” Certificate issued for products exported or re-exported under a CDS from a territory, detailing the source certificate from which the products were obtained, the original and the current form of the products, and the volume of the products in the consignment. Trade certificates can be re-issued as many times as product continues to trade between countries.

“Transshipment” means the transfer of fish that have not previously been landed, from one vessel directly to another, at sea or in port.

¹ Source: FAO. 2017, save for Trade certification, sourced from FAO. 2016, and IUU fishing, complemented by IOTC Resolution 18/03.

² IOTC Resolution 18/03 On Establishing a List of Vessels Presumed to have Carried Out Illegal, Unreported and Unregulated Fishing in the IOTC Area of Competence <https://iotc.org/cmm/resolution-1803-establishing-list-vessels-presumed-have-carried-out-illegal-unreported-and>

PREAMBLE

1. The second performance review of IOTC, which concluded its work in December 2015, recommended that “the IOTC should continue to develop a comprehensive MCS system through the implementation of the measures already in force, and through the adoption of new measures and tools such as a possible catch documentation scheme, noting the process currently being undertaken within the FAO.”³
2. Subsequent to this, a detailed study was commissioned in 2018 and published in 2019 on *Developing a comprehensive MCS system and an electronic Catch Documentation Scheme for IOTC*.⁴ The report rationalises various IOTC Resolutions related to MCS in its first part and makes a proposal for an electronic catch documentation scheme in its second part. The IOTC formed a Catch Documentation Scheme Working Group, whose Terms of Reference were approved by the Seventeenth Session of the Compliance Committee in 2020.⁵
3. In its seventh meeting in 2022, the Chair of the CDS WG offered to work jointly with the IOTC Secretariat on a first draft of IOTC CDS Strategy, to be distributed to CPCs and for consideration by the Compliance Committee in 2023. The structure follows that agreed in the Discussion Paper prepared for the CDS Working Group (CDSWG07 para. 31, CDSWG04 para.17).⁶
4. Sections 3 and 4 presents principles, findings and agreements to date as discussion. Strategic elements are drawn from the discussion and it is these that inform the resulting Strategy, a stand-alone document.
5. The CDS Strategy Companion draws on three main sources, which are referenced throughout:
 - the reports of the meetings IOTC CDS Working Group⁷
 - the MCS CDS Study⁸
 - FAO technical papers and guidelines⁹

³ PRIOTC02 para. 149 <http://www.iotc.org/documents/report-2nd-iotc-performance-review>

⁴ [IOTC-2019-WPICMM02-MCS CDS Study](#)

⁵ The Terms of Reference are to be found in Appendix 9 of the Report of the Seventeenth Session of the Compliance Committee. [IOTC-2020-CoC17-R\[E\]](#)

⁶ IOTC-2021-CDSWG04-01

⁷ Statements are followed by the reference to the meeting of the CDS Working Group and the relevant paragraph of the report, e.g. CDSWG03 para. 13.

⁸ *Developing a comprehensive MCS system and an electronic Catch Documentation Scheme for IOTC, Consultant Report*. [IOTC-2019-WPICMM02-MCS CDS Study](#) hereafter referred to as the MCS CDS Study

⁹ Referenced by author and year (e.g. FAO. 2017a.) and detailed in the Bibliography.

1. OBJECTIVE

1. The objectives of the IOTC CDS strategy are spelled out in the Terms of Reference of the CDS Working Group. The objectives are, through introduction of CDS, to contribute to the following:
 - certification, verification and validation of products' legality with a view to eliminating trade in illegally caught products and ensuring the traceability of products to final market destinations; and
 - provision of scientific information for fisheries management.¹⁰
2. This strategy recalls the basic principles as outlined in FAO Guidelines¹¹, that a Catch Documentation Scheme should:
 - be in conformity with the provisions of relevant international law;
 - not create unnecessary barriers to trade;
 - recognise equivalence;
 - be risk-based;
 - be reliable, simple clear and transparent; and
 - be electronic, if possible.

2. REFERENCE DOCUMENTS AND SCHEMES

3. The present document draws on the documents referred to in the Bibliography. In particular, it draws on the following:
 - The *Voluntary Guidelines for Catch Documentation Schemes* developed by the FAO in 2017;^{12,13}
 - the report *Developing a comprehensive MCS system and an electronic Catch Documentation Scheme for IOTC* developed by a consultant in 2018 (consultant report);¹⁴ and
 - Existing and proposed catch documentation schemes in other RFMOs/Organisations (including ICCAT, CCSBT and CCAMLR) and in Commission members.

¹⁰ The first objective is a grammatical correction without altering the meaning of the original text in Terms of Reference of the CDS Working Group to be found in Appendix 9 of [IOTC-2020-CoC17-R\[E\]](#): "Certification, verification and validation of products legality with a view of eliminating illegally caught products trade and ensure products traceability to final market destination".

¹¹ FAO. 2017a. <https://www.fao.org/publications/card/fr/c/a6abc11e-414a-491b-888a/> hereafter referred to as the FAO Voluntary Guidelines for CDS, or merely the Voluntary Guidelines.

¹² FAO. 2017a.

¹³ including subsequent FAO publications presented in the Bibliography, in particular FAO. 2016. TP596 on design options and FAO. 2022. Technical Guidelines 14 for national authorities.

¹⁴ Developing a comprehensive MCS system and an electronic Catch Documentation Scheme for IOTC, Consultant Report. [IOTC-2019-WPICMM02-MCS CDS Study](#) hereafter referred to as the MCS CDS Study.

3. BASIC DESIGN

3.1. BASIC CDS DESIGN OPTIONS 1-3

Discussion

4. In justifying the establishment of a CDS for the IOTC, the MCS CDS Study¹⁵ highlights the following factors:
 - The goal of CDS is to combat IUU fishing, as revealed in different CDS that have already been established (the European Union CDS, and those of CCAMLR, ICCAT and CCSBT), and in the UN General Assembly (UNGA) Resolution on Sustainable Fishing.¹⁶ The achievement of this goal would allow for the protection of stocks, and the related sustainable fisheries outcomes.
 - CDS encompass tools that span the entire supply chain, from harvest until the territory of importation, denying market access to products of IUU fishing and removing the financial incentives for operating illegally. Market denial is contingent on a solid certificate¹⁷ system and watertight traceability.
 - A binding international fisheries-specific agreement on trade-related measures does not exist. UNGA Resolutions and Voluntary Guidelines do not provide a legally-binding CDS framework in international law (see section 4.4). There exist a series of technical papers produced in recent years by the FAO (see Bibliography), which provide both principles and technical substance.
 - The three existing multilateral CDS (CCAMLR, ICCAT, CCSBT) cover relatively modest harvests (of between 10 000 t and 19 000 t per year in 2016), and being fishery-based have had a significant impact; the unilateral European Union catch certification scheme encompasses all finfish (amounting to 6.2 million tonnes per year in 2016), but being market-based is limited in scope and impact.
5. The MCS CDS Study proceeds to justify a CDS for IOTC in the following terms:¹⁸
 - IOTC has been implementing a trade documentation scheme for bigeye tuna since 2002, but despite its administrative burden, and notwithstanding the fact that there has yet to be a quantification of reduced trade flows as a result of the scheme, its results have remained modest. This is partly due to the significant exemptions.¹⁹
 - The CDSs of both CCSBT and ICCAT have been instrumental in largely eliminating quota overfishing, and the impact has been both measurable and profound. The lesson is that a CDS does enable RFMO and national CPC authorities to monitor all harvests and to

¹⁵ MCS CDS Study Pages 70-74.

¹⁶ Resolution 76/71 on Sustainable Fishing adopted by the General Assembly on 9 December 2021 para 103 <https://documents-dds-ny.un.org/doc/UNDOC/GEN/N21/386/32/PDF/N2138632.pdf?OpenElement>

¹⁷ The CDS document system consists of two basic types of certificates: i) the catch certificate covering the harvesting segment of the supply chain; and ii) the trade certificate covering the trade segment(s) of the supply chain following landing. MCS CDS Study p. 90. Catch certificates (CC) are further subdivided into estimate catch certificates (CC_{est.}) and verified catch certificate (CC_{ver.}) See FAO. 2016. Sections 6.5 & 6.6.

¹⁸ MCS CDS Study pages 74-77.

¹⁹ PRIOTC01 recommended that the statistical document programme should be applied to all products (fresh and frozen), and that the scope should be expanded to address current loopholes (PRIOTC01 para. 62).

ensure that illegally-harvested resources will have great difficulty in entering markets. The value of IUU harvests is thus diminished to such a large extent that the incentives for flouting the rules are eliminated.

- A CDS provides catch monitoring in close-to-real time, of particular importance where total allowable catches and quotas are introduced, both imminent and necessary for IOTC. Where catch data are provided with significant lags, total allowable catch (TAC) and quota systems, and other fisheries management measures, are significantly undermined.
- In order to work, exemptions must be reduced to a minimum. This implies that all foreign and domestic landings are covered by the scheme, and that all mainstream commercial product types fall under it, meaning that complementary MCS measures such as port State controls should be universal.
- A single scheme can cover more than one species, as demonstrated by CCAMLR and the European Union, without adding complexity. It would therefore be uneconomic not to include all commercially-important species subjected to or driven by IUU fishing.²⁰
- Though an IOTC CDS would imply increased administration for those not exporting to the European Union, it is likely that the European Union would recognise the IOTC CDS for tuna products as it has those from other RFMOs, so those already exporting would not suffer an additional burden.²¹ Moreover, the European Union's market-based CDS has led to alterations in trade flows and has given some protection to the European Union market, but has had less impact on IUU fishing²², unlike the potential of a universal fishery-based CDS.

6. In order for a CDS to be fully effective, the MCS CDS Study highlights two critical elements:²³

- The CDS must be implemented by all relevant coastal, flag, port and processing States, which play a direct role in the management and exploitation of the resource. At the same time, there is no need for end-market (consumer) States to collaborate with the scheme. If it to be effective (watertight), States all along the supply chain must be CPCs²⁴ and bound by the provisions of the Resolution that governs the CDS, but most probably as port²⁵ or processing²⁶ States, rather than flag or coastal States.²⁷

²⁰ Eight species are proposed by the MCS CDS Study: yellowfin tuna, skipjack tuna, bigeye tuna, albacore tuna, blue marlin, black marlin, striped marlin and swordfish.

²¹ Commission Regulation. 2009. No 1010/2009 Annex V Recognises CCAMLR Toothfish CDS, ICCAT Bluefin Tuna CDS unconditionally; and CCSBT CDS with conditions.

²² See Mundy (2018) quoted in MCS CDS Study p. 76

²³ MCS CD Study. p. 78-81.

²⁴ CPC encompasses both CP and CNCP; the port or processing States would most likely have the latter status, but this is not prejudged at this stage.

²⁵ The MCS CDS Study proposes an amendment to IOTC Resolution 16/11 to limit the use of ports by CPC vessels to CPC ports only.

²⁶ The MCS CDS Study proposes processing and port States would have to be CPCs in order to handle fish caught in the IOTC area of competence. In practice IOTC can consider cooperating non-contracting Party status rather than contracting Party status.

²⁷ CCAMLR suffered the fate of its toothfish being marketed through States that were not signatories, and had to revert to – much more expensive - high seas patrolling in order to stem IUU fishing.

- The species falling under the CDS should be covered ideally throughout its global range. IOTC tuna stocks are not confined to its area of competence; there is potential for illegally-caught tuna to be relabelled in processing States as legally caught. If the other four tuna RFMOs²⁸ are not party to a CDS, their undocumented tuna would be freely traded and marketed. Fragmented individual border controls result in labour-intensive and in the end ineffective controls, in the absence of a global system.
7. The MCS CDS Study concludes²⁹ that a single eCDS platform is the only viable approach, if the dual objectives of combatting IUU fishing and monitoring quotas and TACs for improved resource management.
 8. Three basic design options were presented in a consultant's MCS CDS Study.³⁰

Option 1 IOTC, together with ICCAT, IATTC and WCPFC, launch a Kobe-type round of negotiations, focusing on the development of a tuna super-CDS, which is to serve all four RFMOs.

Option 2 IOTC builds its own platform, and allows other – future systems – to access some of its data, and vice versa.

Option 3 Forge ahead and develop a stand-alone IOTC CDS.
 9. It is to be noted that though Option 1 would require an agreement across RFMOs on the core principles and functions of the CDS, it could be developed and implemented by one RFMO, and the others could join subsequently, once they had passed the necessary Resolution within their organization.
 10. The IOTC CDS Working Group³¹ noted that **Option 1** would be ideal but probably take a long time and require the participation of other tuna RFMOs. It agreed to revisit the matter after obtaining responses from other RFMOs. It would pursue option 1 (Kobe-type Super CDS) if all the responses from other RFMOs were ambitious enough to meet the IOTC-CDS Working Group's timeframe (CDSWG04 paras. 19 & 26).
 11. Both the IATTC and WCPFC do not currently have any initiative to develop a CDS for tropical tunas.³² Moreover [ICCAT had] no agreed timeframe for the adoption of a CDS for tropical tunas (CDSWG05 paras. 14, 15 & 16).
 12. The CDSWG noted that the IOTC's scheme should be compatible with ICCAT's. It noted that ICCAT would in 2023 decide whether CDS would be expanded to cover other species than Bluefin Tuna (CDSWG05 paras. 19 & 20).

²⁸ Excluding CCSBT, as it only covers one species and that is already subject to a CDS.

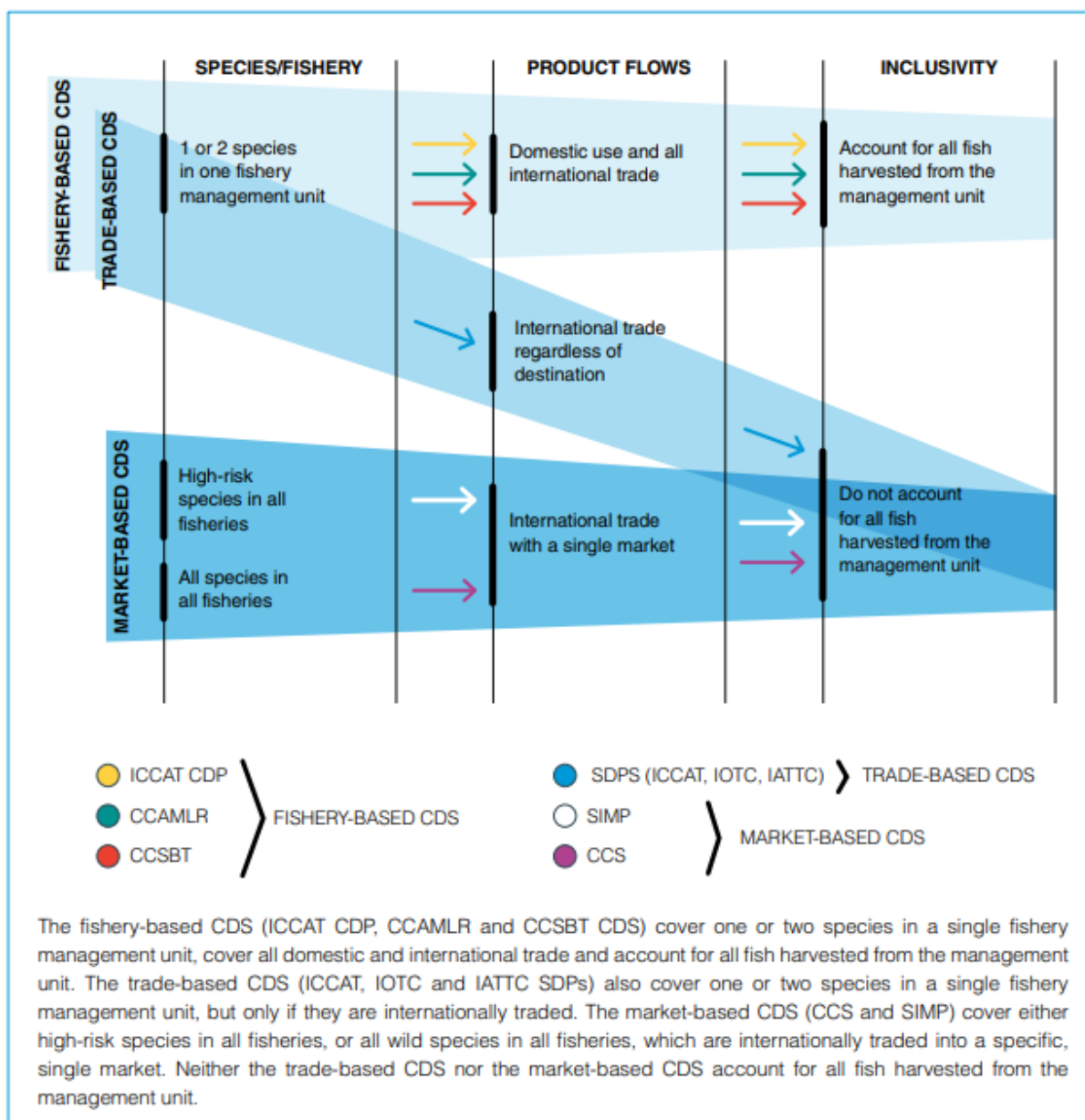
²⁹ MCS CDS Study p81.

³⁰ as described in p82-84 of document [IOTC-2019-WPICMM02-MCS CDS Study](#)

³¹ Referred to as CDSWG followed by the number of the meeting, as appropriate when referring to its deliberations and conclusions, e.g. CDSWG01 para.1. These are available at <https://iotc.org/meetings/7th-meeting-catch-documentation-scheme-cds-working-group>

³² Though CDSWG03 (page 11) had noted that WCPFC had been pursuing Option 3 for a full decade and had yet to adopt a CMM.

13. The CDSWG noted the challenges and drawbacks of Option 2 were potentially data confidentiality and platform compatibility (though it could detect “double spend” fraud) and also that Option 3’s challenges or drawbacks may result in a less effective CDS in curbing IUU fishing and ensuring international coordination (CDSWG03 page 11; CDSWG06 para. 39).
14. While Option 3 will result in the implementation of an IOTC CDS, it would have the following consequences: an ineffective CDS with regards to its ability to curbing IUU fishing incidence; a further erosion of international coordination in trade-related matters where harmonization is needed, and widely recommended as best practice; and severe erosion of the chances for t-RFMOs to ever pursue option 1 (super-CDS), since IOTC will then have invested /opted already into a stand-alone system (CDSWG03 page 11).
15. CDSWG agreed in 2021 to drop design Option 1, in view of the current situation in the three [tuna] RFMOs. While agreeing to continue to pursue Option 2 and Option 3, or a hybrid, the CDSWG agreed that a future IOTC CDS should be forward-looking and be able to accommodate information/data exchange with other information/data management systems both internal and external to the IOTC, and that international cooperation would be desirable in future when developing technical requirements of the IOTC CDS. The CDSWG did, however, reiterate that there was no need to be restricted to Option 2 or to Option 3 (CDSWG05 para. 23, CDSWG06 paras. 36, 37, 40 & 41).
16. In 2022 the CDS Working Group noted three different approaches in implementing a CDS, and represented graphically in Figure 1:
 - fishery-based CDS that covers all domestic and international trade, as per the existing CDSs of CCAMLR, CCSBT and ICCAT;
 - trade-based CDS, which only covers species internationally traded, as per the statistical document programmes of IATTC, ICCAT and IOTC; and
 - market-based CDS, which cover all species but only those products destined for a given single market, as per the catch certification scheme of the European Union and the Seafood Import Monitoring Programme of the USA.



Source: FAO. 2022. Section 3.1

Figure 1 Differences in the existing CDS by species/fishery, product flows and inclusivity

17. Though the CDS Working Group noted that a fishery-based CDS would both support science and combat IUU fishing, in line with the IOTC's CDS objectives, it also noted the current lack of means, infrastructure and capacity of developing coastal States to implement a fully-fledged fisheries-based CDS. Since many CPCs are already implementing the EU Catch Certificate Scheme,³³ a trade-based CDS would be simpler to implement (CDSWG07 para. 17).

³³ Strictly-speaking a market-based CDS

Strategic elements

18. The species falling under the CDS should be covered in their global range.
19. In order for the CDS to be watertight processing and port States would be included as CPCs of IOTC, albeit most probably as cooperating non-contracting parties.
20. IOTC building its own platform, and allowing other – future systems – to access some of its data, and vice versa, is the practical and effective way forward. The CDS should cover, initially, all vessels harvesting and trading tropical tunas in the international market, thus following a two-stage approach, starting with a trade-based CDS that is later upgraded into a fisheries-based CDS (CDSWG07 paras. 18-22).

3.2. SPECIES TROPICAL TUNAS (BIGEYE TUNA, YELLOWFIN TUNA AND SKIPJACK TUNA), THEN OTHER IOTC SPECIES STEP BY STEP.

21. The Terms of Reference of the CDS Working Group³⁴ ask that that in the selection of species, it take into account stock status, IUU risk, the level of international trade and the difficulty of implementation. The CDS Working Group added any other factor (CDSWG05 para. 24).

3.2.1. Stock status

Discussion

22. The latest advice from the Scientific Committee on stock status is presented in Table 1.³⁵ Skipjack was determined not overfished and not subject to overfishing, Bigeye not overfished but subject to overfishing, and Yellowfin both overfished and subject to overfishing.

Strategic element

23. *If* there were to be discrimination in implementation between the three tropical tunas, then priority would be given to Yellowfin, then Bigeye, then Skipjack. But given the importance of all three in the IOTC mandate, and the low marginal costs of additional species, all three are adopted in the first instance for the IOTC CDS.

³⁴ IOTC-2020-CoC17-R Appendix 9 <https://iotc.org/sites/default/files/documents/2020/10/IOTC-2020-CoC17-RE.pdf>

³⁵ WPTT24 convened 24 October 2022; when its report is finalised, it may be possible to update this table.

Table 1 Stock status: Bigeye, Skipjack and Yellowfin

	Possible viewpoints	Bigeye	Skipjack	Yellowfin
Stock Status	Latest advice of Scientific Committee on stock status. Source: IOTC–2021–WPTT23–R[E]	On the weight-of-evidence available in 2019, determined to be not overfished but subject to overfishing. (p43)	On the weight-of-evidence available in 2020, determined to be: (i) above the adopted biomass target reference point; (ii) not overfished (SB2019>SB40%SB0); (iii) fishing mortality below the adopted target fishing mortality, and; (iv) not subject to overfishing (E2019<E40%SB0). (p47)	On the weight-of-evidence available since 2018, determined to remain overfished and subject to overfishing. (p50)

Source: IOTC-2022-CDSWG06-03

3.2.2. IUU Risk

Discussion

24. The proxy considered by the CDS Working Group for IUU risk of the species under consideration was the degree of unreported catch.

25. The findings are summarized in Table 2.³⁶

Table 2 Degree of unreported catch: Bigeye, Skipjack and Yellowfin

	Possible viewpoints	Bigeye	Skipjack	Yellowfin
IUU risk	Degree of unreported catch (Source: IOTC-2020-WPTT22(AS)-R[E])	Generally well-known. Exceptions: Non-reporting industrial PS & LL; some artisanal fisheries	Generally well-known. Exceptions: Many artisanal fisheries.	Generally well-known. Exceptions: many coastal fisheries; one important gillnet fishery; non-reporting PS & LL.

Source: IOTC-2022-CDSWG06-03

³⁶ For details of the summaries below and examples see IOTC-2022-CDSWG06-03.

26. For Bigeye, data are considered to be relatively reliable for the main industrial fleets targeting bigeye tuna, with a relatively low proportion of catches estimated, or adjusted, by the IOTC Secretariat. Catches are less certain for the following fisheries/fleets: non-reporting industrial purse seiners and longliners (not elsewhere included) and other non-reporting industrial fisheries; and some artisanal fisheries.
27. For Skipjack, retained catches are considered to be generally well-known for the major industrial fleets, with a low proportion of catches estimated, or adjusted, by the IOTC Secretariat. Catches are less certain for many artisanal fisheries for several reasons, including: catches not fully reported by species; and uncertainty in the figures from some significant coastal fleets.
28. For Yellowfin, data are considered to be generally well-known for the major industrial fisheries, with a relatively low proportion of catches estimated, or adjusted, by the IOTC Secretariat. Catches are less certain for some fisheries or fleets.
29. Quotas, such as those for Yellowfin, may provide incentives for underreporting.
30. The MCS CDS Study argued that all species are both affected by and driving IUU fishing, and there were considerable benefits in a universal scheme, in the fight against IUU fishing, in data availability and for fisheries management.³⁷

Strategic Element

31. The degree of unreported catch is generally well-known for all three tropical tuna species, exceptions being for some industrial fisheries targeting Bigeye and Yellowfin, and for artisanal and coastal fisheries. The threat and risk of IUU is, however, universal across all species, so as many IOTC species as practicable should ideally be covered.

3.2.3. Level of international trade

Discussion

32. The level of international trade is sourced from FAO's Fishstat. Though subject to a significant set of provisos from the FAO,³⁸ figures do provide an order of magnitude, as presented in Table 3.

³⁷ MCS CDS Study. 2019. p. 75-77

³⁸ Source: FishStatJ <https://www.fao.org/fishery/en/statistics/software/fishstati/en>

As it is difficult to calculate % of trade for the IOTC Area of Competence, the figures are for the entire world. Quantities expressed in live weight and product weight are not directly comparable and combine different types of weights and measurement units.

In the case of product weight, the aggregated figures presented in the table combine a number of different typologies of weight and processed products, including fresh or chilled, gilled and gutted, headed, fillets or other types of preserved or tuna products.

Processed products and in particular prepared and preserved tuna often do not distinguish the species. Therefore, even when extracting the trade products for specific species of tunas, the official quantities reported are very likely to be underestimated

33. Skipjack trade exceeds Bigeye tuna by an order of magnitude of twelve, and Yellowfin tuna by three.

Table 3 Level of international trade: Bigeye, Skipjack and Yellowfin

Species	Indicator	Unit (t)	2018	2019
Bigeye tuna	Capture production	Live weight	424,644	391,953
	Trade (import)	Product weight	153,340	138,011
Skipjack tuna	Capture production	Live weight	3,242,856	3,441,831
	Trade (import)	Product weight	1,722,513	1,686,456
Yellowfin tuna	Capture production	Live weight	1,562,192	1,578,830
	Trade (import)	Product weight	559,706	557,727

Source: FishstatJ

Strategic element

34. On the level of catches and trade alone, priority might be given to Skipjack and Yellowfin tuna, but other factors (see section 3.2.1 on stock status above and sections 3.1 and 3.2.4 on weaknesses in the existing Bigeye tuna statistical documentation scheme), argue for inclusion of Bigeye tuna as well.

3.2.4. Difficulty in implementation and any other factor

Discussion

35. Summarised in Table 4, the CDSWG considered four series of factors with respect to difficulty in implementation: ratio of catch by the artisanal fleet (Annex 1); catch volume in the Indian Ocean (Annex 2); the complexity of gear compositions (Annex 3); and additional factors.
36. Artisanal fleets are reported to comprise 51 percent of all Yellowfin catches, far in excess of the 29 percent for Skipjack and the 24 percent for Bigeye tuna. Catches of Skipjack and Yellowfin tuna exceed those for Bigeye by a factor of at least five. All three tropical tuna species appear to be harvested by heterogeneous gear compositions.
37. Though the implications of these were not discussed, two further factors were identified by the CDS Working Group: the statistical document programme for Bigeye arising from Resolution 01/06 and Resolution 03/03, and the IOTC Commission's Special Sessions on Yellowfin tuna, held in March 2021 and forecast for 2023.

38. Segments of the fleets that would have difficulty in implementing a CDS were presented to the CDS Working Group in 2022³⁹, relate exclusively to artisanal segments and are discussed in section 3.4.

Strategic element

39. Whereas catches of Yellowfin tuna are dominated by the artisanal sector, the proportion of catches from the artisanal sector of Bigeye tuna and Skipjack are far from negligible, arguing for similar challenges across the three stocks if the IOTC CDS is to be comprehensive.

Table 4 Summary table of difficulty in implementation

	Factor	Bigeye	Skipjack	Yellowfin
Difficulty of implementation	Ratio of catch by artisanal fleets	Artisanal 2020: 24%	Artisanal 2020: 29%	Artisanal 2020: 51%
	Catch volume in Indian Ocean	Catch 2020: 83 497 t	Catch 2020: 555 240 t	Catch 2020: 430 956 t
	Complexity of gear composition	Heterogeneous	Heterogeneous	Heterogeneous
	Additional factors	Statistical Document Programme	None	Special Sessions of the Commission

Source: IOTC-2022-CDSWG06-03

3.2.5. Choice of species

Discussion

40. The MCS CDS Study noted that several species could be added to a CDS without adding complexity in implementation, and that therefore it would be uneconomic not to include the commercially-important species that are affected by and driving IUU fishing. It therefore proposed eight of the 16 species under the IOTC mandate (Table 5).⁴⁰

41. Total Allowable Catch or Harvest Control Rules can incentivise underreporting, so other species (in addition to Bigeye tuna, Skipjack tuna and Yellowfin tuna) may be included later, once the CDS has started (CDSWG05 para. 28).

³⁹ IOTC-2022-CDSWG07-02

⁴⁰ MCS CDS Study p.77

Table 5 Eight commercially-important species affected by and driving IUU fishing

English vernacular name	Scientific name	FAO Apha-3 Species Code
Yellowfin tuna	<i>Thunnus albacares</i>	YFT
Skipjack	<i>Katsuwonus pelamis</i>	SKJ
Bigeye tuna	<i>Thunnus obesus</i>	BET
Albacore tuna	<i>Thunnus alalunga</i>	ALB
Blue Marlin	<i>Istiompax nigricans</i>	BUM
Black Marlin	<i>Makaira indica</i>	BLM
Striped Marlin	<i>Kajikia audax</i>	MLS
Swordfish	<i>Xiphias gladius</i>	SWO

Strategic element

42. The CDS Working Group opted for the three tropical tuna species (Bigeye tuna, Skipjack tuna and Yellowfin tuna) in the first instance, with a possibility of expansion after evaluating the results of its implementation (CDSWG04 para. 27, CDSWG05 paras. 26 & 28, CDSWG06 para. 42).
43. Although the primary focus for a CDS should be the tropical tunas (Bigeye tuna, Skipjack and Yellowfin tuna), there was merit in considering Swordfish within the scope of the CDS, and it would be included following a stepwise approach (CDSWG07 para. 16).
44. Further species should be added progressively to encompass those of relevance to IOTC and other RFMOs and reduce IUU pressure on those species excluded in the first instance.

3.3. DESIGN OF AN ELECTRONIC SYSTEM

Discussion

45. The MCS CDS Study argues that the development and adoption of a single eCDS platform serving all t-RFMOs (i.e., “super-CDS”) would save significant resources, reduce the burden of compliance for private and public sector stakeholders, and allow the system to address most financial incentives driving a whole range of critical IUU fishing practices. With regard to the major commercial species with global distribution, harmonized and simultaneous CDS coverage by all t-RFMOs arises as the only viable approach, if an effective and results-driven tuna CDS is to be achieved.⁴¹
46. The MCS CDS Study noted that paper systems such as that of the European Union’s CCS are vulnerable to fraud, which potentially undermines their effectiveness. Other RFMOs had started their CDS in paper form and had transitioned laboriously to electronic systems. For

⁴¹ This view is also shared by major industry leaders in tuna sourcing and processing, and is substantiated in FAO’s technical paper on design options. See FAO. 2016. Section 8

these reasons the MCS CDS Study recommended launching directly into an electronic CDS (eCDS).

47. Electronic CDS offer many benefits over their paper counterparts, including automated data entry and reporting functions, real-time mass balance and yield monitoring alerts to detect fraud in particular consignments, as well as an enhanced ability for stakeholders throughout the supply chain to discern patterns and trends to assess and respond to system-wide risks.⁴²
48. Key data elements (KDE) are detailed in the FAO's 2022 publication.⁴³ KDEs are listed and ranked within five broad categories: fishing vessels, catch, transshipment, farming and landing. These would allow for harmonisation across CPCs, across t-RFMOs eventually and across MCS tools and applications.⁴⁴
49. Irrespective of whether global t-RFMO coverage is practicable in the short- to medium-term, there are clear advantages to an electronic CDS. The CDS Working Group noted the potential for aligning the CDS to the requirements of other IOTC Resolutions, such as the criteria for the Record of Authorised Vessels with further inclusion of those vessels that export their products into international markets (CDSWG06 para. 45).
50. Mechanisms of international trade of tunas are increasingly moving towards electronic systems, and ICCAT has an eCDS and CCSBT is in the process of introducing one. The CDS Working Group agreed that the IOTC CDS should therefore, be an electronic system. However, some WG participants indicated that when the CDS is applied to the artisanal fleets, other approaches may be required in the short-term (see section 3.4) (CDSWG03 page 13, CDSWG06 para. 52, DCSWG07 para. 27).
51. An understanding of the document system of a CDS is necessary in order to strategically clarify the eCDS. The FAO TP596 presents the needed document system clearly.⁴⁵ A CDS works with two types of document: i) the catch certificate covering the harvesting segment of the supply chain; and ii) the trade certificate covering the trade segment of the supply chain after landing. It is worth quoting FAO TP596 on the distinction between these two.
52. Catch certificates should establish what has been unloaded, by whom, and how it has reached land. Once catch has been landed, it must be graded to determine the mix of species and weights, and the recipient(s). Splits occur at this stage, and must be accommodated by the catch certificate system. Catch certificates are first validated on the basis of estimated weights by the flag State before unloading, and then counter-validated (sic) by the port State on the basis of confirmed weights after grading. Once the catch certificate has been counter-validated and graded weights are known, no more sections need be added to establish complete, verifiable and traceable information, and the catch certificate constitutes the formal starting point of CDS traceability.⁴⁶

⁴² FAO. 2022. p. 22

⁴³ FAO. 2022. Chapter 4 and Appendices 1 to 5, where basic, enhanced and advanced KDEs are presented.

⁴⁴ In the ICCAT the Bluefin Tuna CDS is linked to their record of authorised vessels and to their record of total allowable catches, this being an advantage of an electronic system. (CDSWG05 para. 40)

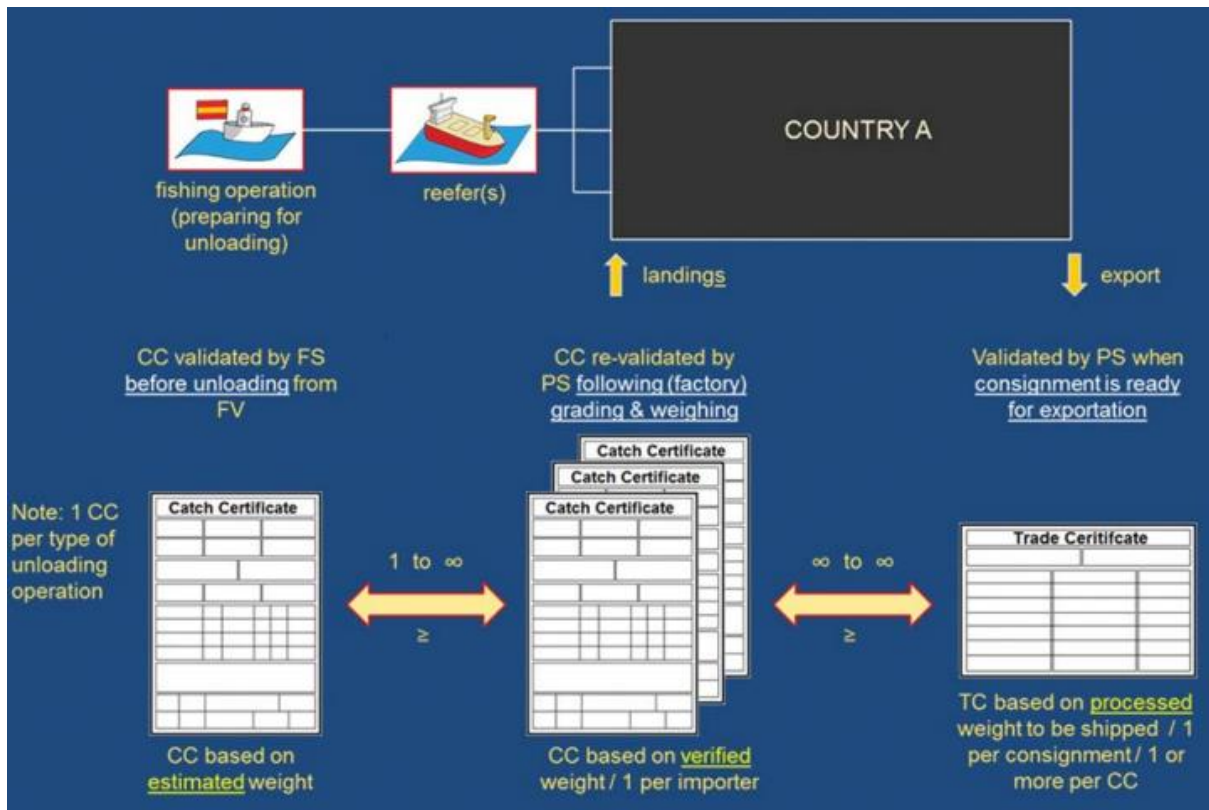
⁴⁵ FAO. 2016. Chapter 6

⁴⁶ FAO. 2016. p. 56

53. There are two types of catch certificate, the one prepared by the fishing operation and validated by the flag State, and providing estimates of what shall be landed (the CC_{est.}), and the CC re-validated by the port State following verification (the CC_{ver.}). More than one verified catch certificate (CC_{ver.}) can be derived from a single estimate catch certificate (CC_{est.}), in case more than one buyer is acquiring catch from a particular landing.
54. To take into consideration artisanal fleets, where the fishing operation will not be able to draft the estimate catch certificate (CC_{est.}), a third catch certificate exists, the simplified catch certificate (CC_{simpl.}). The simplified catch certificate (CC_{simpl.}) is drafted by the buyer or operator on shore and verified by the coastal State, and is therefore a type of verified catch certificate (CC_{ver.}).
55. Trade certificates are issued at the next stop in the supply chain when product leaves a territory on the basis of a verified catch certificate. Trade certificates provide three crucial pieces of information: i) a product table with source certificate lines and resulting product lines detailing product type and weight used and obtained (in processing); ii) the identity of the exporter; iii) the identity of the importer; and iv) transport details. This is a static document which does not evolve once issued. It can be used to repeat re-exportation and re-processing events as often as necessary in the supply chain without loss of traceability. Grouping occurs at this stage, and the trade certificate must be able to accommodate more source certificates – repeatedly.⁴⁷
56. The resulting option for a document system involves two static certificate types – catch certificates and trade certificates – which do not evolve once the essential information is recorded and validated. Any downstream supply chain events give rise to new certificates linking obtained products with their source certificates to maintain supply-chain traceability and mass-balance reconciliation at all stages.⁴⁸
57. Figure 2 provides a graphic representation of the relationship between estimate catch certificates, verified catch certificates and trade certificates.

⁴⁷ FAO. 2016. p. 57.

⁴⁸ FAO. 2016. p. 57.



Note: CC = catch certificate; PS = port state; FS = flag state; FV = fishing vessel.

Figure 2 The relationship between the estimate catch certificate, the verified catch certificate and the trade certificate

58. A central registry system or data repository is an essential element of any CDS, key to traceability and mass balance monitoring and reconciliation, and without which the CDS cannot achieve its objectives.⁴⁹

Strategic element

59. The CDS must comprise catch certificates and trade certificates, all linked to a central database. Catch certificates would be of three types: estimate, verified and simplified.

60. Introduction of a paper-based system would undermine effectiveness of the CDS. A single eCDS platform is the only viable option for achieving the CDS' objectives.

61. Industrial fisheries can implement a fisheries-based CDS from the outset, along with some artisanal sectors as discussed in the next section (those applying the EU catch certification scheme and those that can apply the simplified catch certificate). The remaining artisanal fisheries can be incorporated gradually, to be reviewed annually by the Compliance Committee.

⁴⁹ MCS CDS Study p. 93-94.

62. Key data elements as elaborated in the Voluntary Guidelines (FAO 2022) should be incorporated in the catch and trade certificates, to provide complementarity with other scientific and MCS tools.

3.4. NEED FOR SPECIAL CONSIDERATION TO ARTISANAL FLEETS

Discussion

63. Both industrial and artisanal fleets should be included in the CDS. Notwithstanding this objective, early in its deliberations, the CDS Working Group stressed the importance of understanding CPCs' difficulties and considering them within the CDS design and implementation strategy. Participants indicated the need for special consideration for artisanal fleets, such as extending the CDS gradually to these. There is a lack of facilities and infrastructure for some developing CPCs and there is a need to consider exceptions or special provisions to reflect their realities (CDSWG03 page 12; CDSWG07 paras. 11 & 24).
64. The FAO Voluntary Guidelines for Catch Documentation Schemes (FAO 2017) in their Chapter 7 include mechanisms and recommendations to assist CPCs with small-scale fisheries in implementing a CDS.
65. Small-scale fishing vessels under a certain size and tonnage are not equipped with communication tools to transmit data in real time and certain CPCs would have challenges in complying with an eCDS from vessels when it comes to the artisanal sector (CDSWG06 para. 52, CDSWG07 para. 27).
66. Some CPCs would clearly have difficulties in applying a fisheries-based CDS to the artisanal sectors, specifically to catches that are consumed locally. Moreover, the variability of the characteristics of those sectors would pose difficulties to its implementation. Yellowfin tuna and Skipjack have a high proportion of artisanal catches; if artisanal fisheries were excluded entirely, the CDS would be partial. Moreover, a significant proportion of artisanal catches were not traded internationally. Thus, if only international trade were included then coverage would be partial (CDSWG06 paras. 44, 47 & 48, CDSWG07 para. 12).
67. A CDS is one of a series of tools addressing issues concerning fisheries management and IUU fishing, and there exist other tools to monitor artisanal vessels that sell their products for domestic consumption (CDSWG06 para. 49).
68. Some CPCs have taken the position of excluding small-scale vessels that sell their products into the domestic market from the CDS, and prefer the CDS focus on international trade. Domestic trade may be included through an IOTC Recommendation leading to an IOTC Resolution at a later stage, or within the global CDS Resolution but relevant paragraphs suspended. Notwithstanding any short-term exception for domestic trade, all fish exported, irrespective of vessel size, must be covered by the CDS, albeit in a simplified form (CDSWG06 para. 50, 51 & 55).
69. As remarked in section 3.1 above, the European Union catch certification scheme (CCS) allows for recognition of a CDS developed by a RFMO, as long as they comply with the

requirements of the EU IUU Regulation.⁵⁰ Therefore, an IOTC CDS should accommodate the requirements of the EU market. Some CPCs have a documentation system in place for export of products from the artisanal sector to the EU (its catch certification scheme) but not for locally-consumed products. There is potential to align the IOTC CDS with those artisanal sectors covered by the European Union CCS (CDSWG03 page 13; CDSWG06 para. 46).⁵¹

70. The discussion paper presented to CDS Working Group's fourth meeting,⁵² in highlighting the factors to be considered for a CDS for artisanal fisheries, included a fourth option, allowing the artisanal fleets to use a paper CDS, subject to conversion into electronic CDS at a later stage, though this would inevitably imply additional costs. The same meeting agreed to add a fifth option, which allows artisanal fleets to use "simplified electronic" CDS, for future consideration (CDSWG04 para. 35; CDSWG05 para. 29; CDSWG06 para. 57; FAO. 2016. Section 6.5.12⁵³).⁵⁴
71. After consultation, some CPCs provided information on which segments of their fleets would find difficulty in implementing a CDS, if it is assumed that all fisheries involved in the species covered by the CDS are included (Table 6).
72. Tagging for artisanal fisheries would imply high costs but tagging individual tropical tuna species is not required (CDSWG06 para. 57; CDSWG07 para. 15). FAO TP596 argues convincingly that tagging in substitution of the CDS would not be feasible.⁵⁵
73. As with the summaries on the nature of the estimate catch certificate (CC_{est.}) and the verified catch certificate (CC_{ver.}) in the previous section, it is illuminating to reproduce the text from FAO TP596: *"In the simplified catch certificate (CC_{simp.}) weights are recorded on the basis of verified weights when catch is bought from fishers or middlemen at the landing site. The estimation and verification procedure does therefore not apply to the CC_{simp.}. The CC_{simp.} is generated and logged in the eCDS by the collector or the factory, and is validated by the competent authority of the coastal State; there is no counter-validation. It records product type and weight as received at the landing site. Whether all or part of the collected tuna is exported in a single consignment, a trade certificate must be issued to cover the export. In many cases the product will have been processed and changed form, and the trade certificate must record the weight of raw materials used and the weight of processed product obtained to enable yield-factor monitoring. Therefore:*
- *The collector must generate the CC_{simp.} and log it into the eCDS.*

⁵⁰ COUNCIL REGULATION (EC) No 1005/2008 Article 13. Compliance with requirements is not defined, but precedence allows for a system that is superficially different in form but compliant with technical criteria on traceability and certification. Thus, the IOTC CDS would *not* duplicate the EU CCS. <http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2008:286:0001:0032:EN:PDF>

⁵¹ See section 4.4

⁵² [IOTC-2021-CDSWG04-01](#)

⁵³ FAO. 2016. In its Sections 6.5.12 & 7.2.2 the mechanisms of a simplified catch certificate (CC_{simp.}), primarily applicable to artisanal fisheries whose catches would be recorded on landing, are explained.

⁵⁴ For the purposes of this Strategy, these possibilities fall under special considerations for the artisanal fleet rather than being strategic options per se for the overall IOTC CDS system.

⁵⁵ FAO. 2022. Sections 6.2 & 6.3.

- Only the coastal State may validate the $CC_{simpl.}$
- $CC_{simpl.}$ may not be used alone but must be linked to full trade certificate, the principal document covering the trade.⁵⁶

Table 6 Qualifications and exemptions expressed by CPCs

CPC	Included	Qualifications	Exempted
European Union	All	None	None
Indonesia		Difficulties: < 5 GT operating in territorial waters (no VMS & no e-logbook)	<15 m LOA not mandatory (in support of Maldives' proposal)
Madagascar	All exported products	Some operators collect artisanal products & then export	Impossible for direct CDS with LOA <10 m & within 8 nm
Maldives	All vessels, if their fish goes into international trade, irrespective of vessel size	<24m LOA or <60 GT subject to simplified CDS	national vessels only authorised to operate within coastal waters and their catch is exclusively intended for local consumption and local trade (generally <15 m LOA & <15 GT & operating within 12 nm)
Mozambique	Full CDS for industrial & semi-industrial (13 m < 24 m LOA)	Simplified for artisanal (<13 m LOA) for export Difficulties for local consumption	Artisanal <13 m LOA for domestic consumption
Seychelles	All commercially exported catch	No existing CDS for domestically consumed catch	
Sri Lanka		Fleet segments with difficulties: troll, longline, gillnet & handline (all <100 GT) catching YFT & SKJ within FS EEZ. No onboard communication; coastal one-day operations	

Source: Extracted from 2022-IOTC-CDSWG07-02

Strategic elements

74. The estimate catch certificate ($CC_{est.}$) is generated by the vessel and endorsed by the flag State in the industrial or semi-industrial sectors. This is verified by the port State, at which point the $CC_{ver.}$ is generated.
75. Concerns related to the lack of communication facilities aboard artisanal fishing vessels are addressed by the simplified catch certificate ($CC_{simpl.}$), drafted by the buyer or operator onshore and validated by the coastal State. The simplified catch certificate ($CC_{simpl.}$) may be

⁵⁶ FAO. 2016. p. 65

applied to those sectors that would have difficulty in applying the estimate catch certificate. The simplified catch certificate may be applied in the first instance to all products internationally traded, limiting the scheme to being a trade-based CDS not ideal because not all objectives of the CDS would be met until such time that it evolves into a fisheries-based CDS.

76. Those artisanal sectors that are already applying the EU CCS can be covered in the first instance by the IOTC CDS.
77. The desirable objective of establishing a fisheries-based CDS remains, and should be implemented as soon as possible on a case-by-case basis. A full CDS Resolution would exist, with suspensive paragraphs allowing for gradual expansion to being totally fishery-based.
78. An interim paper-based system would introduce complexity and increase costs considerably, without necessarily contributing to the objectives of the CDS.

4. OPERATIONAL AND ADMINISTRATIVE ISSUES

4.1. RESOURCES

4.1.1. *Financial aspects of the IOTC*

Discussion

79. IOTC's budget is detailed in Annex 5. The total budget estimated for 2024 USD 4.42 million, of which USD 2.86 million amount to staff costs, comprising 12 professional staff and four general service staff. The general service staff together amount to the equivalent of one professional staff member (see Annex 5).

Strategic element

80. The financial impact on IOTC CPCs in the short- to medium-term will depend on whether the capital costs will be met by external financing. The recurrent costs shall be met by IOTC's recurrent budget (see section 4.1.3).

4.1.2. *Capacity building & training programmes*

Discussion

81. Capacity building would be necessary within the Secretariat and in CPCs, developing coastal States in particular.
82. As well as a special focus on developing States, there exists a need to avoid duplication with existing schemes and also the desirability of applying technologies that will help to reduce the workload of exporting CPCs. There are particular difficulties some countries would have in applying a CDS to their artisanal fleets (CDSWG05 paras. 21 & 22), though this can be significantly mitigated with the simplified catch certificate. The question remains whether the temporary application of a paper-based system would indeed ease pressure on the capacity of developing States or whether a simplified electronic system might be a more appropriate way of advancing, as argued in section 3.3 by virtue of the MCS CDS Study and FAO technical papers.

83. The introduction of a paper-based system, even partial, would undoubtedly increase complexity, and costs, on those countries most vulnerable to these factors.
84. Training programmes for the full implementation of the CDS will be at three levels:
- IOTC Secretariat for the overall use, management and maintenance of the system, taking on issues relating to data confidentiality as well as technical matters;
 - training in the use of the eCDS (CC_{est}, CC_{ver.} and TC) for all CPCs (flag State, port State; processing State);⁵⁷ and
 - special training for developing CPCs regarding artisanal fisheries for the simplified CC (coastal State).

Strategic element

85. Over and above the three-tiered training discussed, precise capacity-building and training needs are to be elaborated depending on the technical specificities and design of the CDS, and in response to CPCs' needs and suggestions on an annual basis.

4.1.3. Associated costs.

Discussion

86. Both the agreed objectives of the IOTC CDS and financial considerations will have implications for the design, development and implementation of the IOTC CDS (CDSWG page 13).
87. Additionally, the development of the software to support a CDS would be outsourced, and the long-term management and maintenance of the scheme and software would imply an increase in IOTC's recurrent budget, irrespective of whether it is outsourced or not (CDSWG05 para. 33).
88. In view of the special considerations given to artisanal fisheries and developing coastal States in section 3.4, it is important to consider funding mechanisms to implement CDS systems in developing coastal States, particularly for artisanal fisheries (CDSWG07 para. 25).

Investment costs of the system

89. The CCSBT claims that the CDS was developed in-house by the Secretariat's Data Manager, no special funding or other support was provided for the CDS and any financial costs were covered within the existing CCSBT budget. The effort required from the Secretariat's personnel was approximately 75 percent of the Data Manager's hours over a six-to-eight-month period, followed by approximately ten percent of his or her time thereafter.
90. ICCAT's initial costs over the three years of development (2012-2014) amounted to approximately EUR 864 000 (c. USD 842 000).⁵⁸

⁵⁷ CPCs comprise both CPs and CNCPs, as relevant.

⁵⁸ IOTC-2021-CDSWG06-03 Discussion Paper

91. The investments costs presented in the CDS MCS Study (see Annex 6), excluding the Kobe-type RFMO consultation,⁵⁹ amount to USD 1 490 000.
92. These investment costs would be significantly increased if a paper-based system as well as eCDS were developed.

Investment in developing coastal States

93. Investment in developing coastal States is not envisaged explicitly in the MCS CDS Study's financial proposal, but repeated calls have been made in CDS Working Group meetings for consideration both of developing coastal States and of artisanal fisheries, this being of particular importance to coastal developing States (section 3.4).

Costs of maintaining the CDS at the IOTC Secretariat

94. CCSBT's running costs for members generally engender no financial costs outside the regular CCSBT budget, except for buying tags, approximately JPY 31-35 (c USD 0.21-USD 0.23) per tag. Software costs are very minor, as generally only free software products or software purchased historically have been used.
95. In terms of the time of Secretariat personnel, the CCSBT a total of between 30 percent to 60 percent of a staff member's time has been required plus an additional USD 9 500 per year for casual staff.⁶⁰
96. ICCAT's running costs from 2015 to 2018 have averaged at approximately EUR 348 000 (c USD 340 000), with a high of EUR 403 194 (USD 394 000) in 2018.
97. The costs of the additional full-time and dedicated professional CDS Officer proposed in the MCS CDS Study would amount to approximately one-twelfth of overall staff costs, or USD 170 000 per year, based on the present staff costs (Annex 5). If the officer is to be of general service local staff,⁶¹ the cost would be approximately USD 40 000 per year, and if national project personnel, about USD 16 000 per year.
98. The MCS CDS Study argued that several species can be added to a CDS without adding complexity, nor significantly increasing costs, and that it would be uneconomic not to include all commercially-valuable species, and suggested eight as a minimum (see Table 5).⁶²
99. Most if not all CPCs have a data recording system in place and also implement the EU Catch Certification Scheme for exported products, so additional costs involved in applying a CDS would not necessarily be very high and would not need to be outsourced (CDSWG06 para. 58).⁶³

⁵⁹ Kobe-style negotiation was rejected by the CDS Working Group

⁶⁰ Data Manager 10%-20%, Compliance Manager 30%-40% (prior to having assistant) or 20%-25% (after having assistant), plus casual staff (data entry & CDS Assistant) AUD 15 000 (c USD 9 500) per year

⁶¹ G5 or G6 level.

⁶² MCS CDS Study. p. 77.

⁶³ Though this is undoubtedly the case, one is reminded that it is the European Union CCS that would recognise the IOTC CDS (see Section 4.4), not the other way round.

100. If it was decided not to have a tagging requirement, due to the volume of fish that will be subject to the scheme, costs would be reduced (CDSWG05 para. 36).

Strategic elements

101. There are three financial aspects that IOTC will need to address:
- i. The investment costs of elaborating the technical specifications, developing the electronic platforms⁶⁴, piloting and eventual launch into production. This would include launch and some training costs in IOTC CPCs over a number of years after production.
 - ii. The investment costs of implementing the IOTC CDS in selected developing coastal States.
 - iii. The costs of maintaining the IOTC CDS at the IOTC Secretariat
102. Given the high variation in investment costs between CCSBT, ICCAT and the MCS CDS Study, choices will have to be taken as to whether design would be out-sourced or in-house, and whether time would be split between existing staff and/ or a CDS Officer recruited. A decision will also be made as to whether the CDS Officer would be professional or of general service.
103. Given the low marginal costs of including additional species, and the benefits to the fight against IUU fishing and to science that additional species would provide, it would be advisable to include the additional species as quickly as possible, subject to financial considerations, if any.

4.2. OPERATIONAL ISSUES, ROLES AND RESPONSIBILITIES AND INTERNATIONAL LAW

Discussion

104. The roles and responsibilities for a segment of fishers can be reduced by declaration at landing sites, to local government offices or to processors/exporters and central government can delegate its role of validation to local structures (e.g. cooperatives/associations) (CDSWG05 para. 37). As mentioned above (section 3.4), these concerns can be addressed through the application of the simplified catch certificate.
105. Some CPCs have concerns regarding data confidentiality. Different traceability requirements of some schemes (e.g. area fished, information on fishing vessel) will have implications on confidentiality and what information would be visible or displayed in the system. The information to be shared (with markets or with IOTC's other systems) would depend on the information that will be included (CDSWG05 paras. 22, 41 & 42).
106. The key data elements (KDE) contained in the CDS guide for national authorities, are divided into three categories: basic, enhanced and advanced.⁶⁵

⁶⁴ The formats for electronic or paper forms (even if the system is electronic, the forms may on occasion need to be printed on completion) are proposed in Annexes I, II and III of the draft Resolution reproduced here in Annex 4.

⁶⁵ FAO. 2022. Chapter 4; Appendix.

107. The IOTC MCS CDS Study makes the following observations with regards to the framework of international law:

- A binding international fisheries-specific agreement on trade-related measures does not exist. And this may well be one of the primary reasons why CDS, despite their enormous potential, have been slow in developing.
- UNGA Resolutions to date⁶⁶ embody statements of intent, and are not legally binding.⁶⁷
- CDS are covered in the 2001 IPOA-IUU⁶⁸, where certain principles are evoked.
- FAO adopted a set of voluntary guidelines in 2017.⁶⁹

108. In addition, the FAO has produced a series of technical papers, outlining both principles and good practice, focussed on national authorities (FAO. 2022), the area beyond national jurisdiction (FAO. 2016), and country-level support (FAO. 2017b).

Strategic elements

109. Data normally required of the fishers can in the case of artisanal fishers be delegated to the processors or exporters, with validation by the coastal State competent authority.

110. The exhaustive list of key data elements contained in the CDS guide for national authorities can form the basis for IOTC's deliberations on the precise data elements and the confidentiality requirements for each.⁷⁰

4.3. OPPORTUNITIES TO UTILIZE EMERGING TECHNOLOGY

Discussion

111. It is to be recalled that both CCCSBT and ICCAT have introduced eCDS⁷¹.

112. Whilst there are fears that an electronic system might cause some difficulties for some fishers, the reality of both the European Union's CCS and the system proposed in the MCS CDS Study and by the FAO Design Option, FAO Guide for National Authorities and the FAO Voluntary Guidelines point towards a simplified catch certificate. It is to be recalled that a simplified catch certificate obviates the need for fishers recording electronically (though those who wanted to could elect to do so): this task is delegated to the buyers or processors and coastal State authorities (see section 3.4).

⁶⁶ UNGA resolutions on Sustainable Fisheries N° 61/105 of 6th December 2006 and N° 62/177 of 18th December 2007, and most recently resolutions 75/89 of 8 December 2020 and 76/71 of 9 December 2021

⁶⁷ Resolutions adopted by the GA on agenda items are considered to be recommendations and are not legally binding on the Member States. The only resolutions that have the potential to be legally binding are those that are adopted by the Security Council. <https://www.un.org/en/model-united-nations/how-decisions-are-made-un>

⁶⁸ under the chapter on Internationally Agreed Market-Related Measures (Articles 65 to 76). Principles of transparency, non-discrimination, multilateralism, standardization (harmonisation) and compatibility with the WTO framework.

⁶⁹ FAO. 2017a. Voluntary Guidelines for Catch Documentation Schemes. Rome. 20 pp. www.fao.org/3/a-i8076e.pdf.

⁷⁰ FAO. 2022. Chapter 4; Appendices.

⁷¹ There may be potential for applying blockchain technology to the CDS.

Strategic element

113. If the system relied on the estimate catch certificate and the verified catch certificate alone, artisanal fishers would be faced with difficulties in complying with the requirements of the CDS. However, the technical proposals of the MCS CDS Study and the FAO include a simplified catch certificate, that obviates the need for the fisher to register his or her catches directly. Buyers or processors would complete the simplified certificate electronically, and these would be endorsed electronically by the coastal State competent authority.⁷²
114. Software including a mobile phone and tablet application may be an appropriate consideration in this context.

4.4. THE INTEGRATION OF CDS WITH THE MONITORING, CONTROL AND SURVEILLANCE AND MANAGEMENT FRAMEWORK OF THE IOTC, OTHER DATA REPORTING OBLIGATIONS AND PROGRAMS

Discussion

115. The IOTC, following the recommendations of PRIOTC2,⁷³ commissioned the IOTC MCS CDS Study, that encompassed both a review of MCS measures enshrined in IOTC Resolutions and the introduction of an electronic CDS, thus underlining the inextricable interdependencies and links between the two. The MCS CDS Study concludes that *"...the fragmented nature of resolutions, generally pursuing very specific targets, leads to gaps and oversights across the regulatory substance as a whole."*⁷⁴ The IOTC MCS CDS Study resulted in a proposed consolidation of 17 Resolutions into eight Resolutions.
116. There still exists a need for integration of CDS with other MCS measures of the IOTC and national or regional programmes (CDSWG05 para. 38).
117. Keeping the European Union CCS for IOTC species and aligning the IOTC CDS to it would duplicate systems and complicate the IOTC CDS. As per the EU-IUU Resolution, the European Union CCS would accommodate the IOTC CDS, not the other way round (see section 3.4). This would have particular advantages if and when the IOTC CDS is adopted by other RFMOs or harmonised with other tuna RFMOs' CDSs as they develop.
118. Thus, application of the IOTC CDS to tuna products exported to the EU would obviate the need to apply the European Union CCS paper trail: the IOTC CDS would serve as a substitute for the European Union's Catch Certification Scheme, both for industrial and artisanal fisheries.
119. Japan's import certification system, introduced in 2022, does not envisage covering tunas. Thus, there will be no duplication between domestic trade measures and those of RFMOs (CDSWG05 para. 39).

⁷² At different stages of the process, paper reports can be printed if required.

⁷³ Report of the 2nd IOTC Performance Review. <http://www.iotc.org/documents/report2nd-iotc-performance-review>

⁷⁴ MCS CDS Study p 108

120. ICCAT's Bluefin Tuna CDS is linked to their record of authorised vessels and to their record of total allowable catches, this being an advantage of an electronic system (CDSWG05 para. 40). Information to be shared (with markets or with IOTC's other systems) would depend on the information that will be included in the CDS (CDSWG05 para. 42).
121. The MCS CDS Study points out that the IOTC lacks a high-seas boarding scheme, which would be an important MCS tool. In order to fill this gap, it provides a draft Resolution for such a scheme (MCS CDS Study Appendix XI).
122. In addition, the MCS CDS Study provides the full text of a proposed Resolution covering an electronic CDS,⁷⁵ reproduced in Annex 4.

Strategic element

123. For integration into a solid monitoring, control and surveillance (MCS) framework it is necessary on the one hand to consolidate the different IOTC Resolutions relating to MCS. On the other hand, it is necessary to pass a dedicated Resolution on an electronic CDS. The draft Resolution presented in the MCS CDS Study is to be found in Annex 4 and forms an integral part of this Strategy Companion.
124. The consolidation of the 17 MCS Resolutions into eight streamlined Resolutions, the adoption of an IOTC high seas boarding scheme Resolution and of the IOTC CDS Resolution is dependent on CPC proposals to the Commission.
125. The eCDS would be linked to and integrated with other MCS tools under the auspices of IOTC, such as the, ePSM, IUU listing, Record of Authorised Vessels and VMS
126. The eCDS would be linked in the long-term to and integrated with other RFMO systems. This will depend on the key data elements that are adopted within the catch certificates and trade certificates that IOTC adopts; thus, a reconciliation between the requirements of other RFMOs' CDSs, and with IOTC's will be required. Adoption of at least FAO's KDEs will facilitate this reconciliation.

5. TIMELINE

127. Possible timeline for implementation, with prioritization and/or step-by-step approach as necessary, is presented in the IOTC CDS Strategy.
128. It is based on the details provided by the MCS CDS Study (see Annex 6) and the strategic outline provided to date by the CDS Working Group.

⁷⁵ MCS CDS Study. Appendix XII.

BIBLIOGRAPHY

COMMISSION REGULATION (EC) No 1010/2009 of 22 October 2009 laying down detailed rules for the implementation of Council Regulation (EC) No 1005/2008 establishing a Community system to prevent, deter and eliminate illegal, unreported and unregulated fishing <https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32009R1010&from=EN>

COUNCIL REGULATION (EC) No 1005/2008 of 29 September 2008 establishing a Community system to prevent, deter and eliminate illegal, unreported and unregulated fishing, amending Regulations (EEC) No 2847/93, (EC) No 1936/2001 and (EC) No 601/2004 and repealing Regulations (EC) No 1093/94 and (EC) No 1447/1999 <http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2008:286:0001:0032:EN:PDF>

FAO. 2001. International Plan of Action to prevent, deter and eliminate illegal, unreported and unregulated fishing. Rome, FAO. 24p <https://www.fao.org/fishery/en/ipoa-iuu>

FAO. 2016. Design Options for the Development of Tuna Catch Documentation Schemes. Technical Fisheries and Aquaculture Paper No. 596 <https://www.fao.org/3/i5684e/i5684e.pdf>

FAO. 2017a. Voluntary Guidelines for Catch Documentation Schemes. Rome. 20 pp <https://www.fao.org/3/i8076EN/i8076en.pdf>

FAO. 2017b. Seafood Traceability for Fisheries Compliance: Country Level Support for Implementing Catch Documentation Schemes. Technical Fisheries and Aquaculture Paper No. 619 <https://www.fao.org/3/i8183en/i8183EN.pdf>

FAO. 2018. Catch Documentation Schemes for Deep Sea Fisheries in the ABNJ: their Value, and Options for Implementation. Technical Fisheries and Aquaculture Paper No. 629 <https://www.fao.org/3/CA2401EN/ca2401en.pdf>

FAO. 2022. Understanding and implementing catch documentation schemes – A guide for national authorities. FAO Technical Guidelines for Responsible Fisheries No. 14. Rome. <https://doi.org/10.4060/cb8243en>

IOTC. 2018. Developing a comprehensive MCS system and an electronic Catch Documentation Scheme for IOTC, Consultant Report. [IOTC-2019-WPICMM02-MCS CDS Study](https://www.iotc.org/sites/default/files/documents/2018/04/IOTC-2019-WPICMM02-MCS_CDS_Study.pdf)

Mundy, V. 2018. The impact of the EU IUU Regulation on seafood trade flows: Identification of intra-EU shifts in import trends related to the catch certification scheme and third country carding process. Environmental Justice Foundation, Oceana, The Pew Charitable Trusts, WWF. Brussels, Belgium.

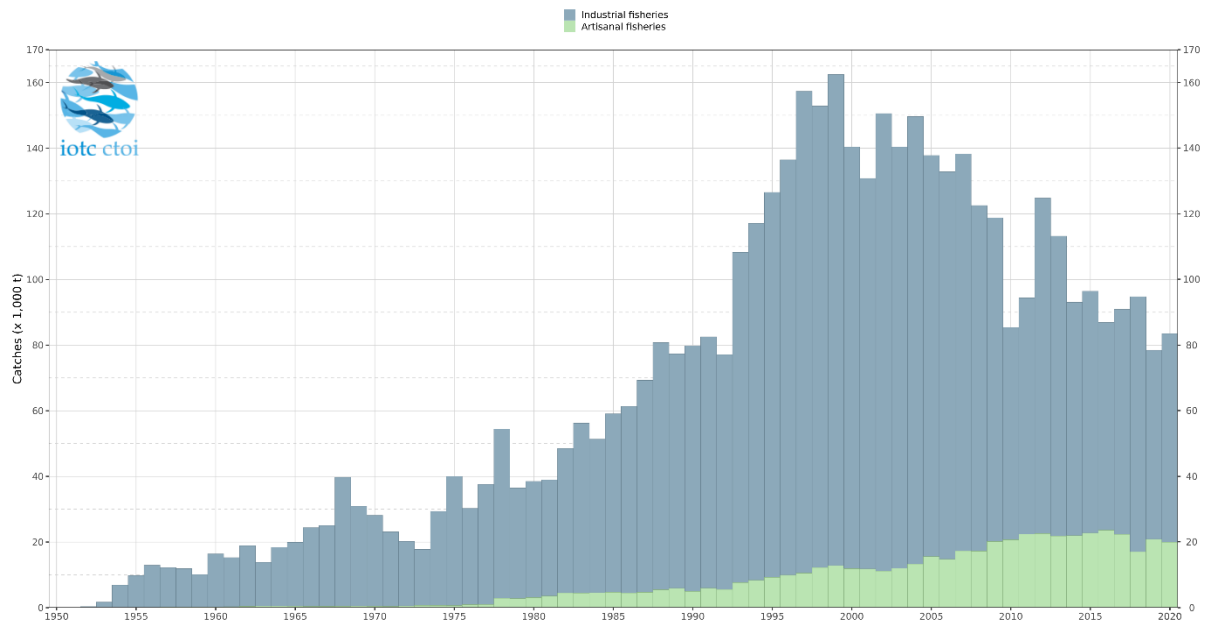
PRIOTC01. 2009. Anonymous (2009). Report of the IOTC Performance Review Panel: January 2009. Indian Ocean Tuna Commission. IOTC-2009-PRP-R[E]: 56 pp. <https://iotc.org/documents/report-iotc-performance-review-panel>

PRIOTC02. 2016. Report of the Second IOTC Performance Review. Seychelles 2–6 February & 14–18 December 2015. IOTC–2016–PRIOTC02–R[E]: 86 pp https://iotc.org/sites/default/files/documents/2016/04/IOTC-2016-PRIOTC02-RE_-_FINAL_0.pdf

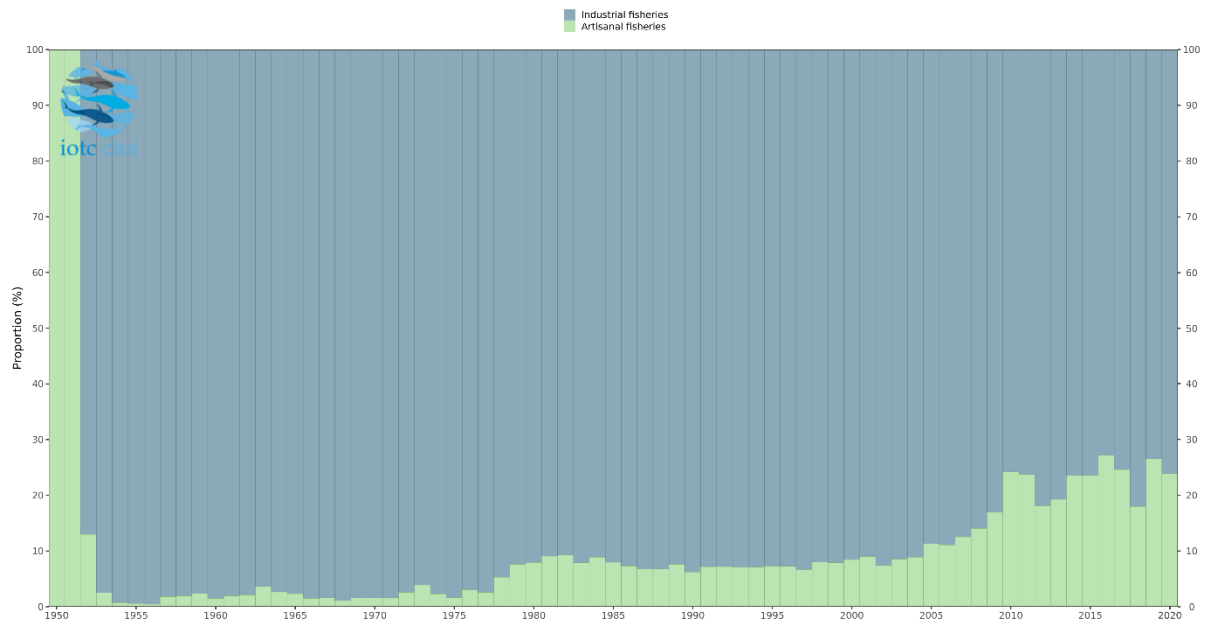
Annex 1 *Difficulty: Ratio of catch by artisanal fleet*

Bigeye

Yearly catches by fishery type (1950 - 2020 / TROPICAL / BET)
Generated by IOTC from best scientific estimates of nominal catches on 2022-02-02 07:48:44 GMT. Data last updated on 2021-11-22



Proportion of yearly catches by fishery type (1950 - 2020 / TROPICAL / BET)
Generated by IOTC from best scientific estimates of nominal catches on 2022-02-02 07:48:54 GMT. Data last updated on 2021-11-22

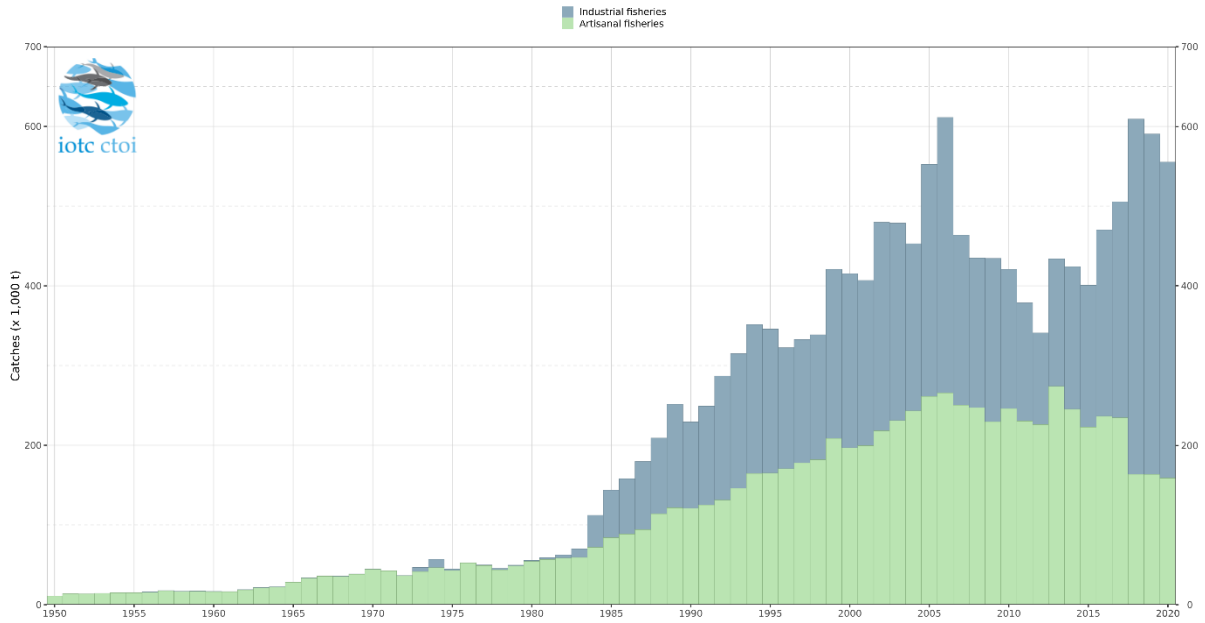


Source: IOTC Data Section Feb22

Skipjack

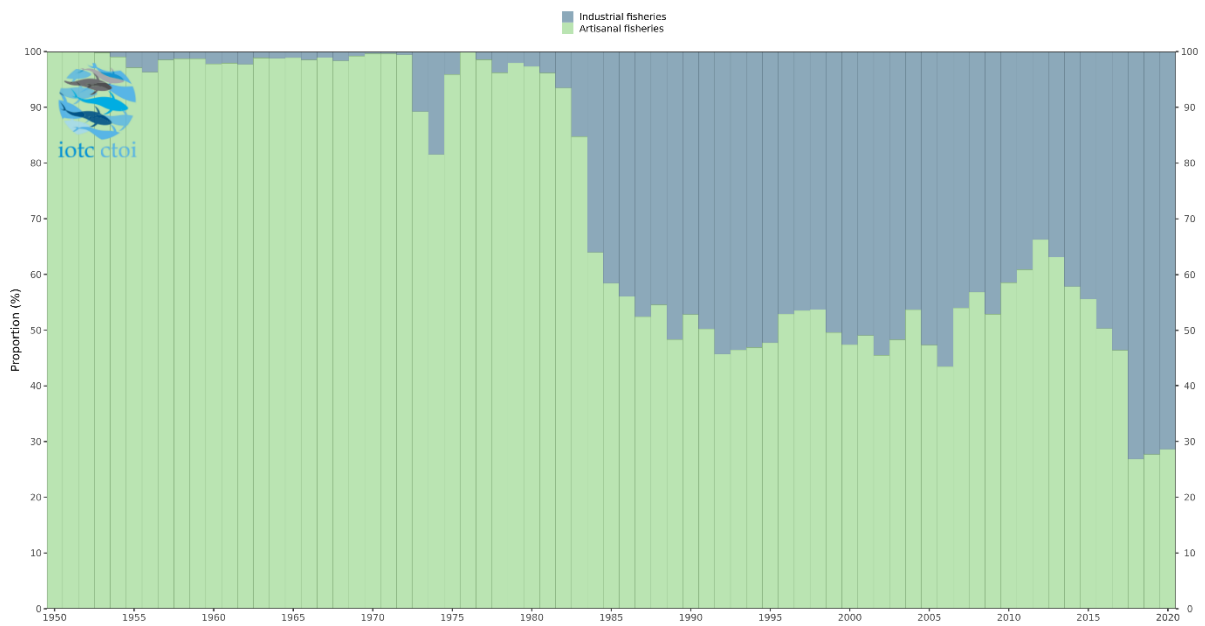
Yearly catches by fishery type (1950 - 2020 / TROPICAL / SKJ)

Generated by IOTC from best scientific estimates of nominal catches on 2022-02-02 07:49:56 GMT. Data last updated on 2021-11-22



Proportion of yearly catches by fishery type (1950 - 2020 / TROPICAL / SKJ)

Generated by IOTC from best scientific estimates of nominal catches on 2022-02-02 07:50:03 GMT. Data last updated on 2021-11-22

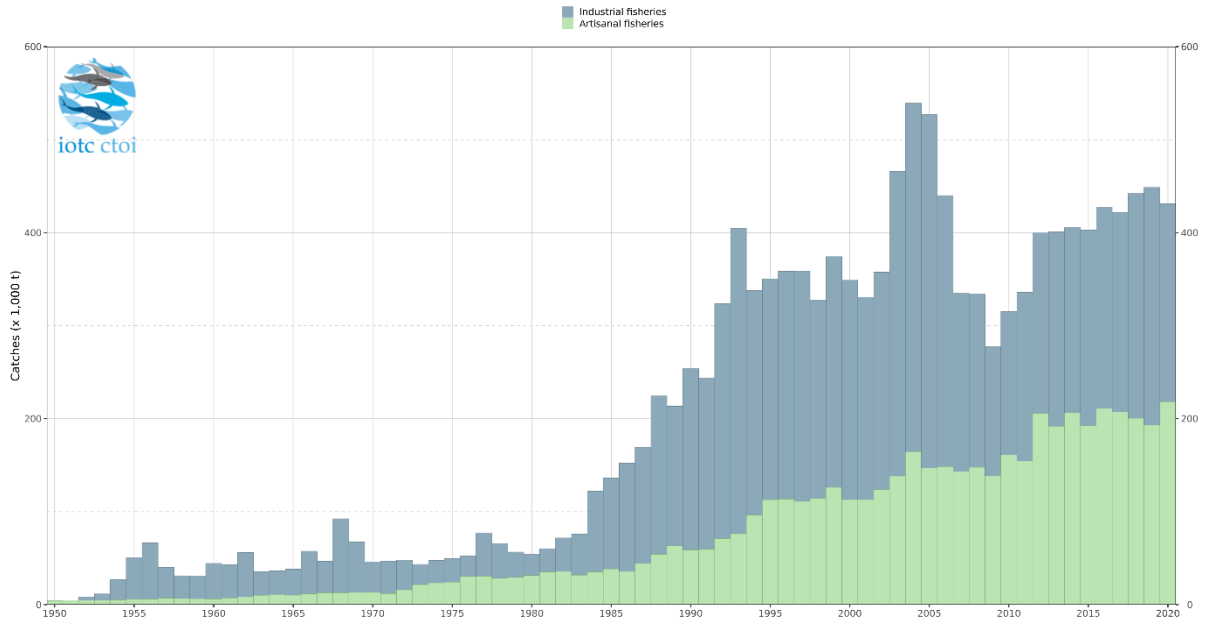


Source: IOTC Data Section Feb22

Yellowfin

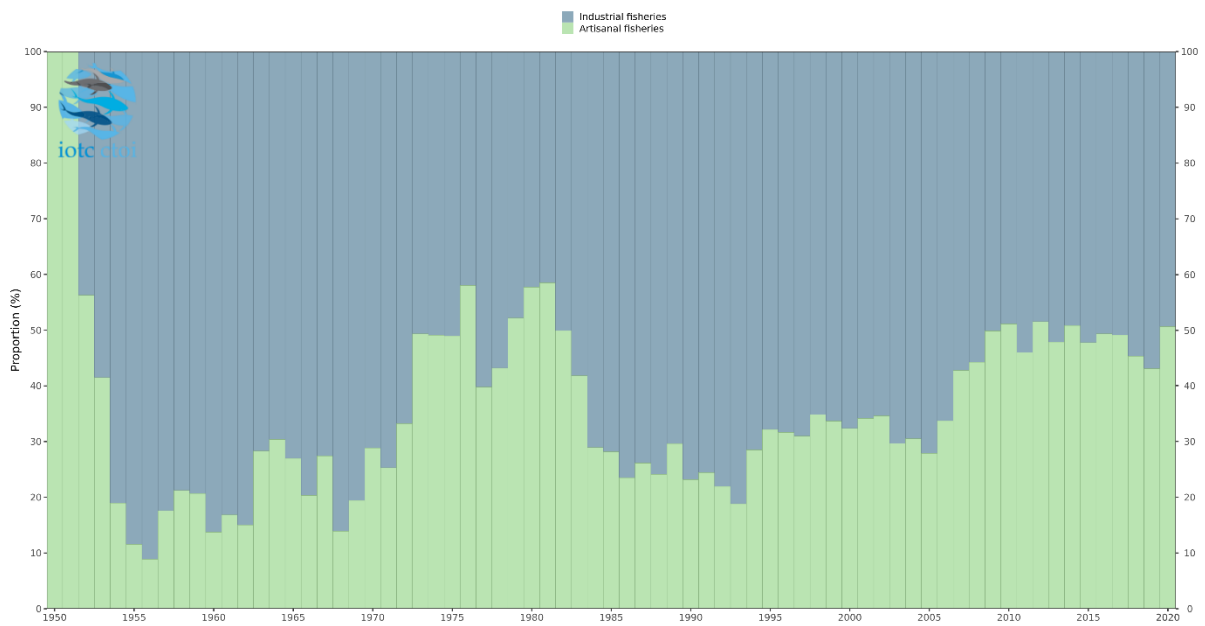
Yearly catches by fishery type (1950 - 2020 / TROPICAL / YFT)

Generated by IOTC from best scientific estimates of nominal catches on 2022-02-02 07:49:28 GMT. Data last updated on 2021-11-22



Proportion of yearly catches by fishery type (1950 - 2020 / TROPICAL / YFT)

Generated by IOTC from best scientific estimates of nominal catches on 2022-02-02 07:49:40 GMT. Data last updated on 2021-11-22

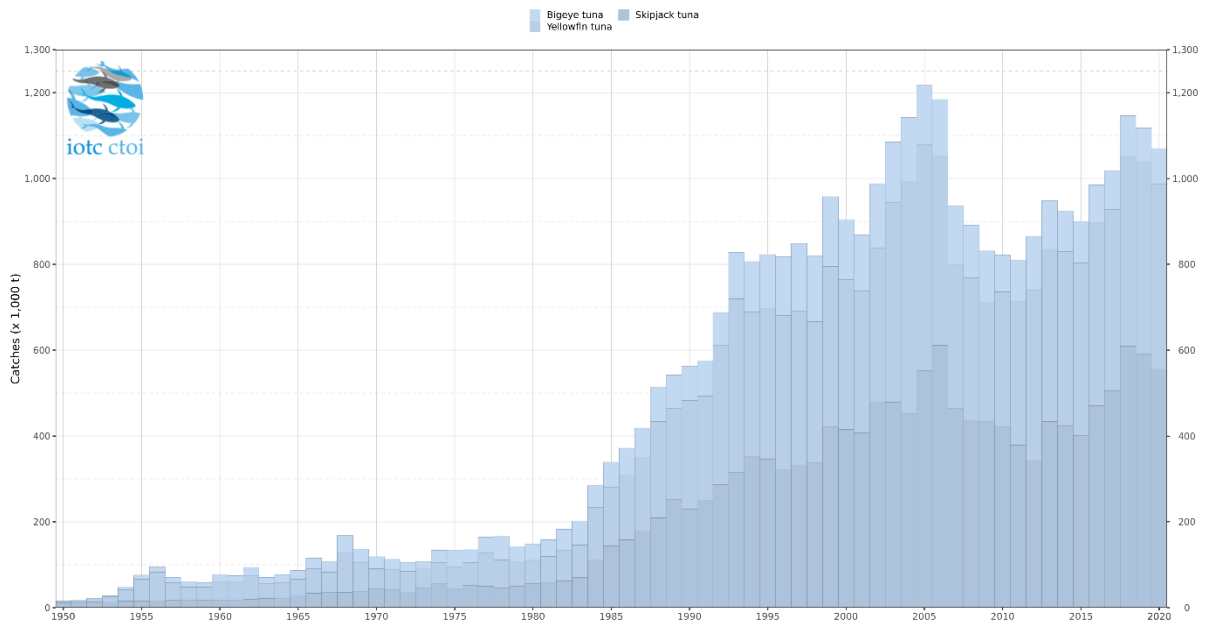


Source: IOTC Data Section Feb22

Annex 2 Difficulty: catch volume in the Indian Ocean

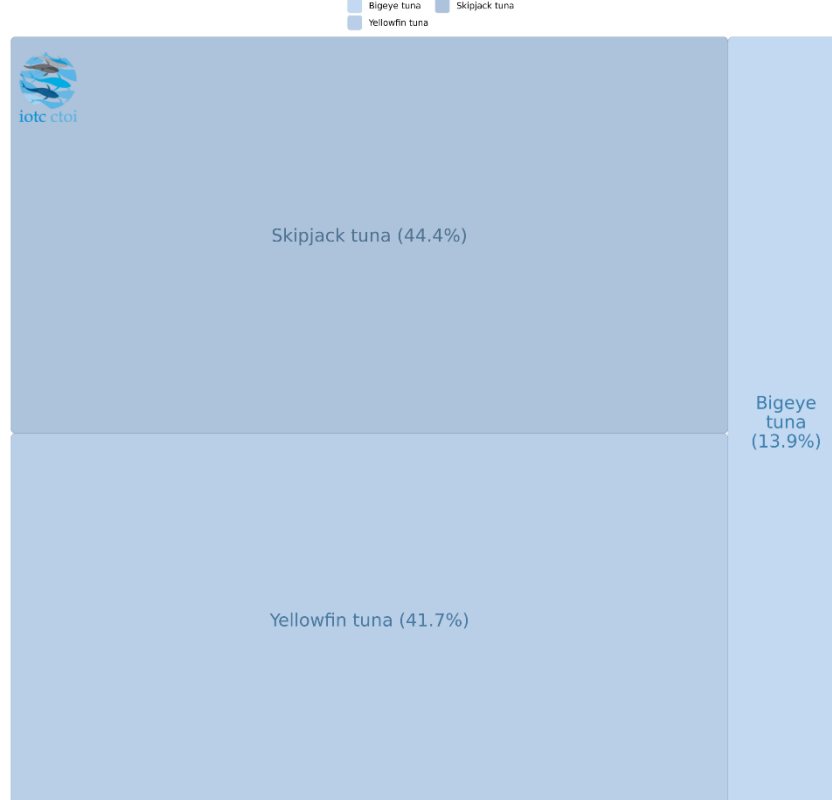
Yearly catches by species (1950 - 2020 / TROPICAL)

Generated by IOTC from best scientific estimates of nominal catches on 2022-02-02 07:46:03 GMT. Data last updated on 2021-11-22



Distribution of total catches by species (1950 - 2020 / TROPICAL)

Generated by IOTC from best scientific estimates of nominal catches on 2022-02-02 07:44:59 GMT. Data last updated on 2021-11-22



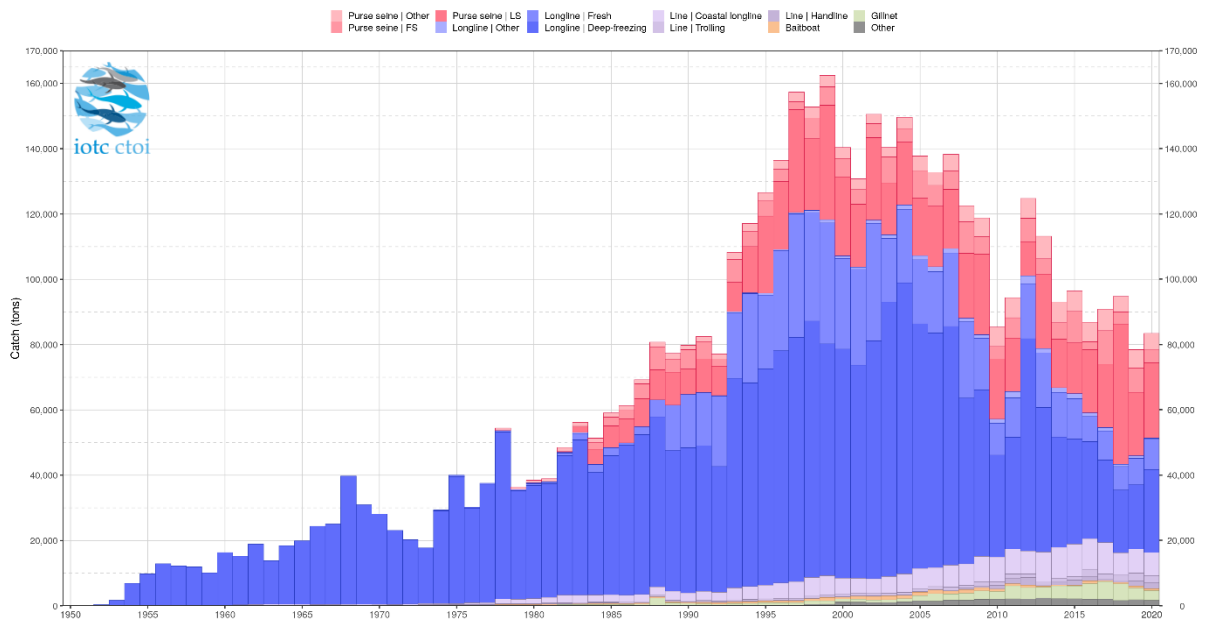
Source: IOTC Data Section Feb22

Annex 3 Difficulty: gear composition

Bigeye

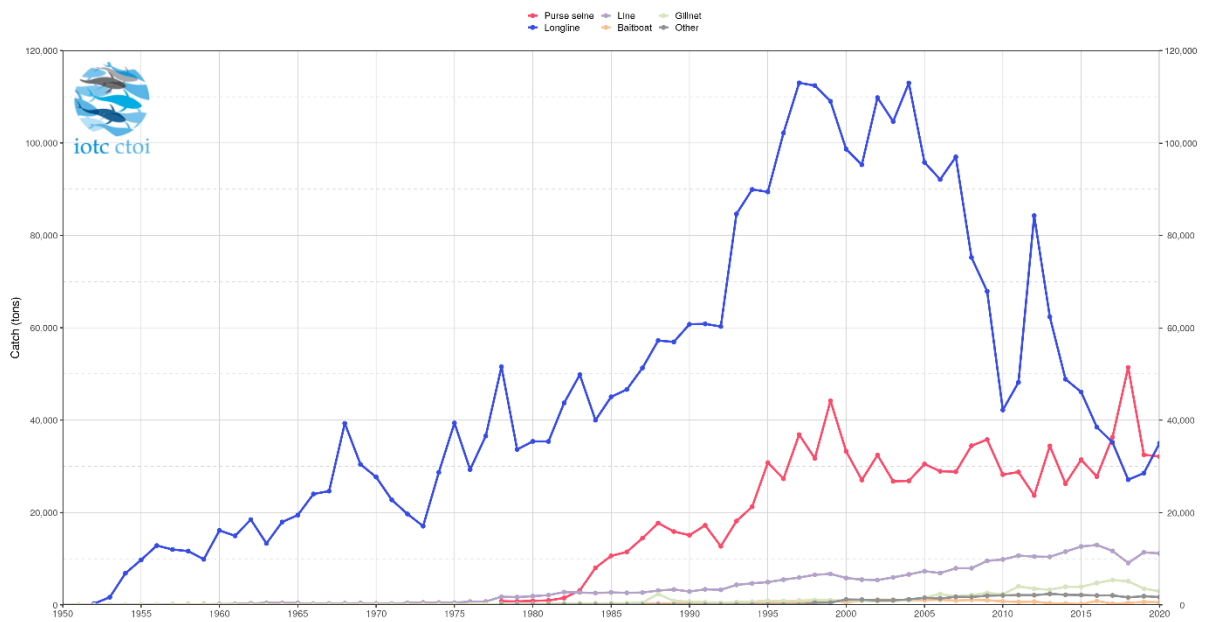
Yearly catches in tons by fishery (1950 - 2020 / TROPICAL / BET)

Generated by IOTC from raised georeferenced catches on 2022-02-02 08:02:44 GMT. Data last updated on 2021-11-22



Yearly catches in tons by fishery group (1950 - 2020 / TROPICAL / BET)

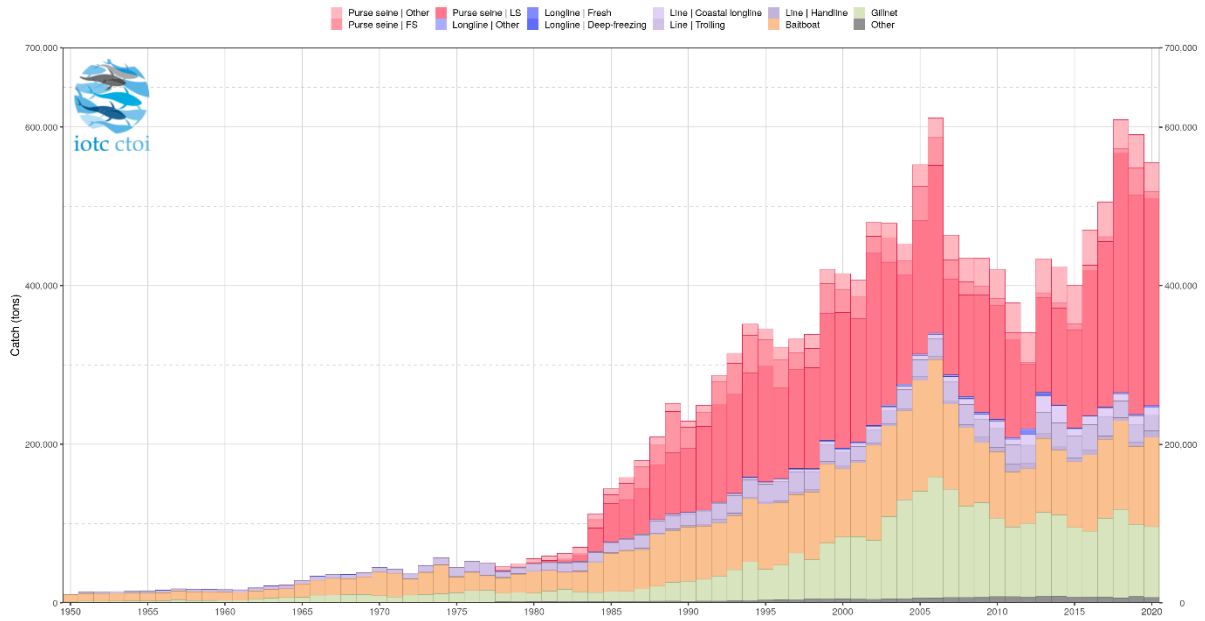
Generated by IOTC from raised georeferenced catches on 2022-02-02 08:03:21 GMT. Data last updated on 2021-11-22



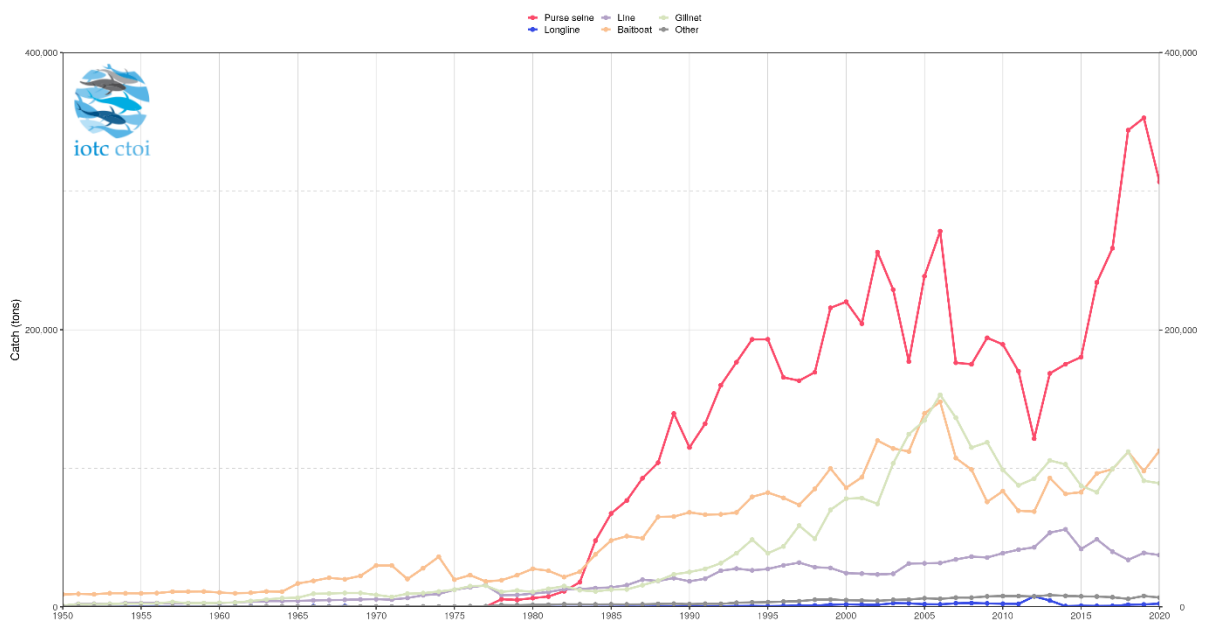
Source: IOTC Data Section Feb22

Skipjack

Yearly catches in tons by fishery (1950 - 2020 / TROPICAL / SKJ)
 Generated by IOTC from raised georeferenced catches on 2022-02-02 08:04:23 GMT. Data last updated on 2021-11-22



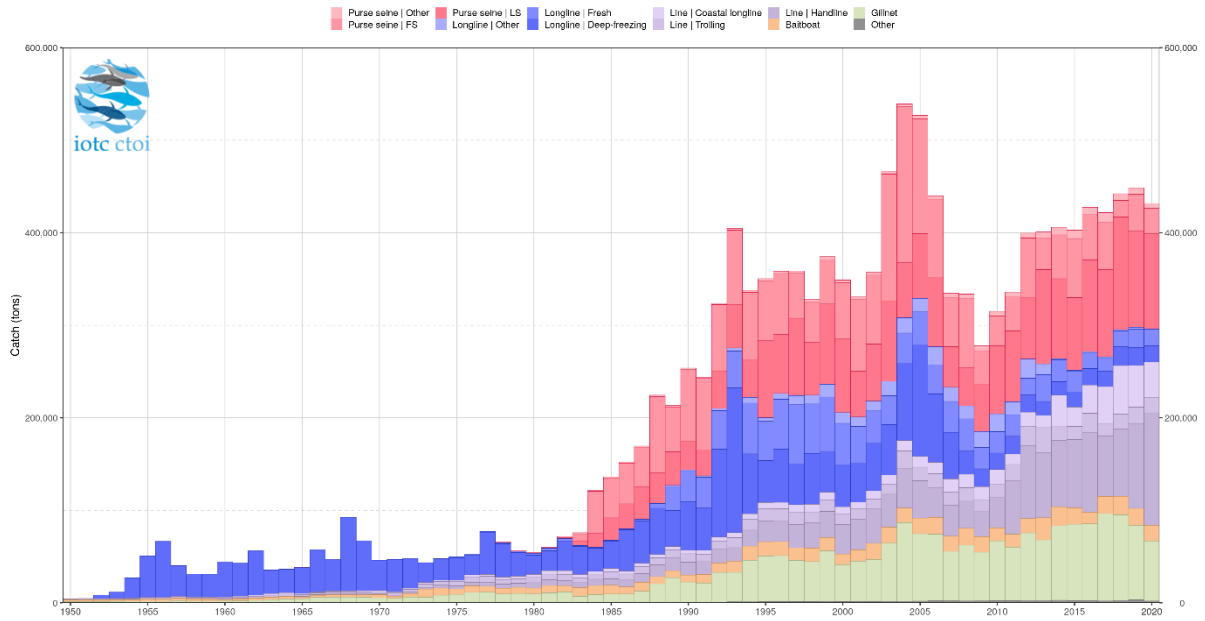
Yearly catches in tons by fishery group (1950 - 2020 / TROPICAL / SKJ)
 Generated by IOTC from raised georeferenced catches on 2022-02-02 08:03:45 GMT. Data last updated on 2021-11-22



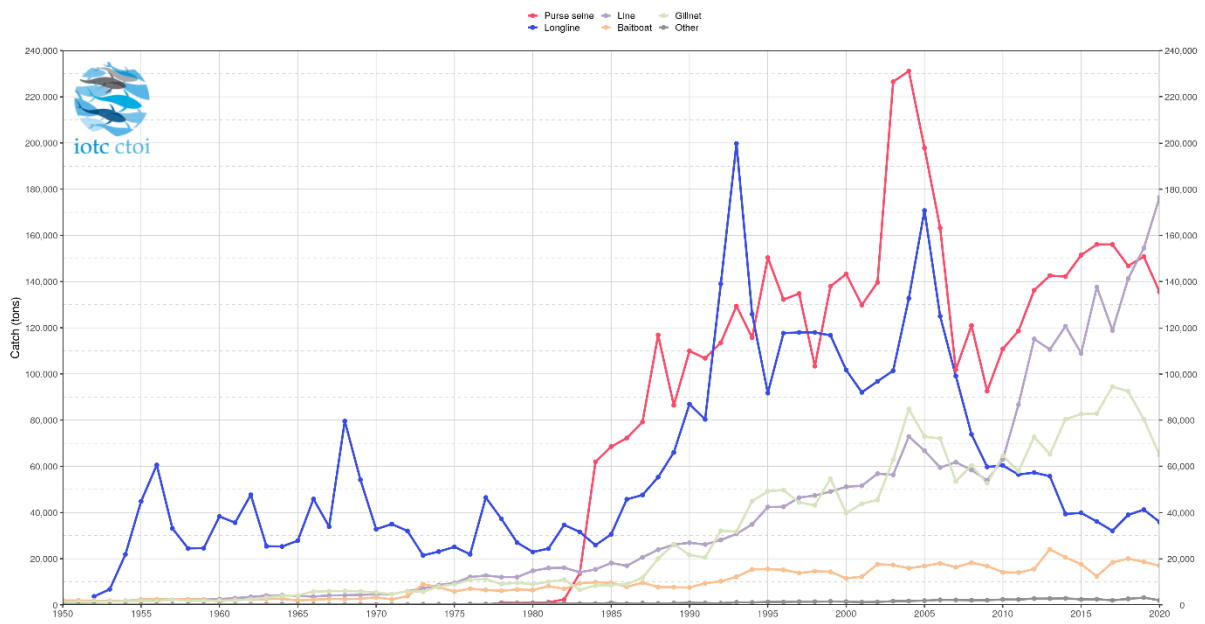
Source: IOTC Data Section Feb22

Yellowfin

Yearly catches in tons by fishery (1950 - 2020 / TROPICAL / YFT)
 Generated by IOTC from raised georeferenced catches on 2022-02-02 08:05:35 GMT. Data last updated on 2021-11-22



Yearly catches in tons by fishery group (1950 - 2020 / TROPICAL / YFT)
 Generated by IOTC from raised georeferenced catches on 2022-02-02 08:05:14 GMT. Data last updated on 2021-11-22



Source: IOTC Data Section Feb22

Preamble

The Commission,

concerned that illegal, unreported and unregulated (IUU) fishing for tuna and highly migratory species (HMS) in the Area of Competence threatens serious depletion of stocks;

aware that IUU fishing involves significant by-catch of endangered species such as sharks and seabirds;

noting that IUU fishing is inconsistent with the objective of sustainable fisheries management and seriously undermines the effectiveness of conservation and management measures;

noting the responsibility of Flag States to ensure that their vessels conduct their fishing activities in a legal manner;

mindful of the right and obligations of coastal and port States to promote the effectiveness of regional fishery conservation and management measures;

emphasizing the right and duties of processing States and end-market States to promote effective regional fishery conservation and management measures through the monitoring and regulation of trade;

recognizing that the implementation of a Catch Documentation Scheme (CDS) for tuna and other HMS will provide the Commission with the information necessary to promote the management objectives of the Convention;

committed to taking steps consistent with international law to identify the origins of tuna and other HMS entering the markets of Cooperating Parties and Cooperating Non-Parties (collectively designated as CPCs) to the Commission and to determine whether species harvested in the Convention Area that are imported into, processed in and/or traded through their territories is caught in a manner consistent with IOTC conservation and management measures;

wishing to reinforce the conservation measures already adopted by the Commission with respect to tuna and other HMS;

aware of the importance of enhancing cooperation with non-contracting parties (NCPs) to help to deter and eliminate IUU fishing in the Area of Competence; and

inviting NCPs whose vessels fish for tuna and HMS in the Convention Area or participate in the processing and/or trade of these species to participate in the CDS;

hereby adopts the Resolution set out below.

Definitions

1. Catch certificate. An electronic document generated through the interface of IOTC's electronic catch documentation scheme (e-CDS) documenting the harvest, transshipment, transfer, landing and first sale of tuna and HMS.
2. Trade certificate. An electronic document generated through the interface of IOTC's e-CDS documenting the importation, processing and export or re-export of consignments of tuna and HMS products in harvested or processed form.
3. Certificate number. A system-generated random ten-digit sequence that uniquely identifies any catch certificate and trade certificate in the e-CDS.

4. Competent authority. The State authority responsible for the verification, validation and/or counter-validation of catch certificates and/or trade certificates. A competent authority may be constituted in a coastal, flag, port, processing or end-market State.
5. Coastal State. The State in whose Exclusive Economic Zone (EEZ) tuna and HMS may be harvested, which is entitled to verify the validity of catch certificates issued and validated for fishing operations in its waters.
6. Flag State. The State that controls fishing vessels flying its flag and operating in the Convention Area whose competent authority has primary responsibility for validating catch certificates.
7. Port State. The State that controls a particular port area or free trade zone for the purposes of landing and transshipment whose competent authority has primary responsibility for verifying and counter-validating landing details in catch certificates, including verified weights of landed products.
8. Processing or market State. The State that controls a particular territory or free trade zone for the purposes of importing, warehousing, processing, exporting and re-exporting products whose competent authority has primary responsibility for verifying and validating trade certificates.
9. End-market State. The State importing fisheries products within whose territory imported products are consumed in their totality regardless of further processing in that territory; products imported into end-market States cannot re-enter international trade as exports or re-exports.
10. Landing. The first movement of catch in its harvested or processed form from a vessel to a dock or to another vessel in a port or free trade zone where the catch is certified as landed by an authority of the Port State. Landings can be done by fishing vessels, reefers and motherships.
11. Mass-balance anomaly. A condition arising when more product than the quantity recorded in a certificate enters the supply chain. The e-CDS detects such anomalies at the individual certificate level.
12. First point of sale. The farm, company or trader identified in the catch certificate acquiring a batch of live-transferred or landed fish; the verified weight of landed product is established at the first point of sale.
13. Importation. Catch entering any part of a State's territory, except where the catch is landed or transhipped according to definitions of 'landing' or 'transshipment' in this CMM.
14. Exportation. Any movement of catch in its harvested or processed form from territory under the control of the State or free trade zone of landing, or, where that State or free trade zone forms part of a customs union, any other member State of that customs union.
15. Re-exportation. Movement of catch in its harvested or processed from the free trade zone or the State territory or the territory of a State member of the customs union of import unless the entity concerned is the first place of import, in which case the movement is an 'exportation' as defined in this CMM.
16. Transshipment. Movement of catch in its harvested or processed form from a vessel to another vessel, the latter including reefers and motherships, and, where such transfer takes place in the territory of a Port State, for the purpose of removing it from that State. Temporarily placing catch on land or an artificial structure to facilitate such transfer shall not prevent the transfer from being a transshipment where the catch is not landed according to the definition of 'landing' in this CMM.
17. Transfer: Movement of live fish from the nets of a fishing vessel either directly or via tow cages into the growing cages of a fattening facility or fish farm.
18. Unloading. Removing fish from a fishing vessel either as a landing, an at-sea transfer of live fish into tow cages, or an at-sea or in-port transshipment, or any other movement of fish from a fishing vessel into the supply chain; discards are not covered.

CDS objective and coverage

19. The objective of the CDS is to combat IUU fishing by denying fisheries products derived from IUU fishing access to markets. Only products certified in the CDS as being of legal provenance may be landed and enter international trade and markets.
20. CDS data may be useful in combination with other information for research and MCS efforts. Such uses are to be determined by the Commission and are subject to the data confidentiality rules provided in Paragraph 40.
21. The CDS embodies a near-real time catch accounting mechanism that can be adapted for use as a TAC and quota-monitoring tool in output-managed fisheries.
22. The species to be covered by the CDS at launch are the commercial species of: i) Bigeye tuna; ii) Yellowfin tuna; iii) Albacore tuna; iv) Skipjack tuna; v) Blue marlin; vi) Black marlin; vii) Striped marlin; and viii) Swordfish. The fishing gear used to harvest these species is covered by the CDS.
23. Other HMS managed by the IOTC but not covered initially may be covered at a later date as decided by the Commission. Such species may include sharks.
24. The fishery products covered by the CDS include all forms of fresh or frozen meat and preserved forms of fish products for trade and consumption. Secondary products – heads, tails, guts, gill plates, fish meal, bones, oils, offal, eyes, roe and hearts are exempt from the CDS.
25. The CDS applies to:
 - i) All landings of CPC vessels listed on the IOTC Record into foreign ports, and to all domestic landings of CPC vessels listed on the IOTC Record if landed products are to enter international trade;
 - ii) Small-scale artisanal fishery products are exempt from the CDS if such products are landed domestically, are sold into domestic markets and do not enter international trade. All other domestic and foreign harvesting and unloading operations are covered by the CDS regardless of the final market of the harvested products.

Traceability and mass balance

26. The CDS implements verifiable traceability equitably and transparently with across all States and individual economic operators participating in the harvesting and international trade of the tuna species covered.
27. With two minor exceptions (see Paragraph 41 and Paragraph 67) the CDS traces fish products from the fishing vessel through unloading and through international trade to the point of final import into the end-market State.
28. The CDS provides international traceability by logging and tracing trade among countries and territories until the product reaches the end-market State.
29. The CDS does not provide national traceability. Product movements and commercial transactions inside countries and territories are not covered directly.
30. The CDS traces batches of harvested products recorded in separate rows in the catch certificate catch table (see Annex I, section 3) throughout the supply chain by line number.
31. The e-CDS automatically monitors line-by-line mass-balance between all pairs of source certificates and the associated resulting trade certificates, and triggers alarms when mass-balance anomalies arise.

Electronic means and data confidentiality

32. The e-CDS is a web-based central electronic platform and database; it is accessed by users remotely through individual log-on procedures.

33. The e-CDS allows any number of tuna RFMOs to participate and can be customized to allow for the integration of RFMO-specific rules and functions.
34. Private-sector and public-sector users have access to the e-CDS as provided in Paragraph 32.
35. The e-CDS has four user groups and customized interfaces for each:
 - i) The private-sector interface, enabling the logging and submission of certificates for validation and other functions to which they have access.
 - ii) The public-sector interface, enabling competent authorities to validate or counter-validate certificates, access information and use other functions of the e-CDS to which they have access.
 - iii) The RFMO interface, enabling oversight and access to the information needed for monitoring and reporting.
 - iv) The administrator interface, enabling technical personnel to administer the system.
36. Certificate data are entered into the e-CDS by private-sector users, who are wholly responsible for the accuracy of the data. No data forming part of certificates are entered or submitted by competent authorities.
37. Sessions by all users logging onto the system and their actions during each session are logged.
38. The e-CDS provides functions such as data logging, data saving, querying of datasets and automated alarms. Specific functions allow users to:
 - i) create fleet and processing facility profiles;
 - ii) initiate sessions to issue certificates;
 - iii) log certificate data;
 - iv) link certificates;
 - v) submit certificates for validation;
 - vi) upload supporting documents;
 - vii) open and validate certificates;
 - viii) trace certificates;
 - ix) verify mass balance along the supply chain;
 - x) review and edit certificates; and
 - xi) block certificates, etc.

The User Manual referred in articles 55 to 57 details the user groups' access to CDS functions and the applicable rules.

39. The e-CDS enables the integration of national and Commission VMS data for automated verification of fishing vessels' reported areas of operation.
40. The e-CDS data are subject to the following minimum data confidentiality rules:
 - i) Access by private-sector users is limited to data relating to their company, fleet and factory operations and to immediate upstream certificate information allowing them to create links with certificates from which products are sourced. Upstream certificate information is stripped of details not relevant to the creation of links.
 - ii) Access by competent authorities is limited to national datasets and immediate upstream certificate information.
 - iii) The Commission, its subsidiary bodies and Secretariat have access to data for the purposes of reporting, research and enforcement (see Paragraphs 99 and 100). Any use of data other than those specified in this CMM requires a specific decision by the Commission.

Document system and rules

41. The document system of the CDS is based on the catch certificate (unloading) and trade certificate (import/export).
42. Certificate models are unique and supplied by the e-CDS as shown in the annexes to this CMM.
43. A simplified catch certificate may be used in artisanal and small-scale commercial fisheries where separation of catches cannot be maintained because of the accepted modes of harvesting, unloading and pooling of catches at sea or on land.
44. Under the simplified catch certificate, traceability back to individual fishing vessels is forfeited.
45. The catch certificate is completed and submitted electronically for validation by the vessel operator at each planned unloading. The catch certificate covers the part of any catch to be unloaded. The validated catch certificate must be in place before unloading takes place.
46. The catch certificate cannot be submitted or validated after unloading, except in cases of *force majeure*.
47. Trade certificates may link back to catch certificates and simplified catch certificates and are not affected by the type of catch certificate to which they are linked.
48. The catch certificate is always issued on the basis of estimated weights; the simplified catch certificate is always issued on the basis of verified weights.
49. A model catch certificate and a simplified catch certificate are appended in Annex I and Annex II of this CMM.
50. The trade certificate is completed and submitted electronically for validation by the exporter each time a consignment is readied for export. For a first export the source certificate of the trade certificate is a catch certificate or a simplified catch certificate; for any re-export, the source certificate is the earlier trade certificate under which the source products were imported.
51. The importer of a consignment shall record the acceptance of a consignment in the e-CDS. Failure to do so entails that the trade certificate is not available for re-export and that the consignment has reached its end-market destination.
52. The trade certificate model to be used for export or a re-export is the same.
53. The CDS and its rules do not in any way replace existing documents, forms, applications or authorizations provided for in other CMMs unless specifically provided for in this or any other CMM.

User manual

54. The Executive Secretary will establish and maintain an e-CDS User Manual.
55. The User Manual provides detailed procedures for managing and completing catch and trade certificates. The User Manual may be revised or expanded upon the initiative of CPCs, the Commission, a subsidiary body to the Commission or the Secretariat, when the need arises. An *a priori* or an *a posteriori* decision of the Commission is required to formally adopt any revision or expansion implemented by the Secretariat.
56. The procedures in the User Manual cannot run counter to the rules established in this CMM.
57. The User Manual has two versions, one for private-sector operators and one for public-sector authorities. Core sections of the manual are shared between both.
58. The User Manual provides guidance under the following headings:
 - i) seeking helpdesk assistance
 - ii) using the e-CDS user interface;

- iii) the e-CDS functions available to the user groups, the applicable rules and guidance for use;
- iv) procedures for completing certificates and the submission and uploading of supporting documents;
- v) procedures for issuing catch certificates for transshipments, unloadings to several recipients, transfers and re-export of bulk tuna;
- vi) procedures for the amendment, cancellation or blocking of issued certificates;
- vii) procedures for estimating live fish weights transferred into farms; and
- viii) rules for preparing CDS reconciliation reports and specification of the levels of data aggregation and confidentiality required.

Roles of CPCs

59. CPCs shall provide to the Executive Secretary the name and address of their competent authorities and the nature of their responsibility – coastal, port, flag or market. This information shall first be made available two months before the e-CDS enters into force, and may be updated thereafter on an as-needs basis.
60. Coastal State or flag State CPCs shall notify the Executive Secretary of the small-scale artisanal and small-scale commercial fisheries eligible to use simplified catch certificates. This information shall first be made available two months before the e-CDS enters into force, and may be updated thereafter on an as-needs basis.
61. Competent authorities should develop risk-based verification routines to enable them to establish the legal standing of transactions in certificates submitted to them for validation.
62. Competent authorities shall validate certificates in cases where verification provides assurance as to the legality of transactions to be certified.
63. Flag State competent authorities shall verify catch certificates submitted by their fishing vessel operators to establish the legality of fishing operations.
64. Market State competent authorities shall verify trade certificates submitted by their food business operators to establish the correctness of information in certificates relating to source materials, processing, processing yields and invoicing.
65. Market State competent authorities shall inspect the facilities and audit the records of national food business operators in cases where mass-balance anomalies are detected.
66. Coastal State competent authorities should verify catch certificates for fishing operations in their waters. Coastal State competent authorities shall block flag State validation of such certificates if there is evidence of IUU fishing in their waters. Coastal State approval is based on the principle of non-objection: only if a coastal State competent authority objects to the validation of a certificate will its validation be blocked. In the event of a blocked catch certificate, the flag and the coastal States shall cooperate directly to investigate and resolve the matter.
67. Port State competent authorities shall verify validated catch certificates before transshipments, transfers or landings can be authorized in its ports.
68. Port State competent authorities shall counter-validate the verified weight of landed products shown in catch certificates when they are received and graded at a facility.
69. Port and market State competent authorities shall ensure that no primary products (see Paragraph 24) are imported into their territories without a validated certificate.
70. Market State competent authorities shall ensure that no primary products (see Paragraph 24) are exported from their territories without a certificate validated by them.
71. CPCs should inform the Executive Secretary and the Commission about CDS implementation issues and where appropriate submit proposals for improving its operation.

Rights and duties of NCPs

72. NCP private-sector operators may not access the e-CDS and may not issue certificates.
73. NCPs are encouraged to apply CDS rules with regard to product landings and imports to provide assurances that no products enter their territory without validated certificates provided by flag States or market States.
74. NCPs involved in the trade of products covered by the CDS shall gain CPC status in order to fully participate in international trade of the products in any function other than the final importing end-market State.

Tuna aquaculture

75. In tuna-fattening aquaculture, accounting for fish for reconciliation purposes is undertaken on the basis of numbers of fish, not weight. The number of fish received by farms compared with the number harvested from them is used by the e-CDS to establish mass-balance compliance. Verified weights received by farms and verified weights removed from farms are also recorded.
76. In tuna-fattening aquaculture, transfers from several fishing vessels may be pooled in single grow-out cages for the purposes of the CDS, without prejudice to rules of origin and tariff considerations, which may require cages to be separated according to source fishing vessel flag and destination markets.
77. A trade certificate is issued when tuna is harvested from a farm whether its destination is domestic or international.
78. With regard to cages in which fish from more than one transfer are pooled, trade certificates are issued sequentially on the basis of the catch certificates for fish delivered to the farm and the dates of caging. The first catch certificate received for a cage is the first catch certificate to be used to link trade certificates until it is exhausted, after which the next catch certificate is used, and so on.
79. In aquaculture operations where species covered by the CDS are obtained from eggs, CPCs shall require the issue of IOTC trade certificates for all harvests and select “CLOSED CYCLE” in the first column of section 1 of the trade certificate.

Non-Compliance and Sanctions

80. Non-compliance with national fisheries laws and conservation and management measures established under the IOTC Convention, constitutes IUU fishing. Certificates covering product shown to be derived from IUU fishing shall not be validated or counter-validated by competent authorities pending sanction under national law(s).
81. Coastal States shall block validated and counter-validated catch certificates relating to proven IUU fishing operations in their waters.
82. Such blocking of catch certificates by coastal States shall occur before the port State counter-validates the certificates: this is to limit financial prejudice to legal operators in the supply chain following the landing, buying and grading of products.
83. No product harvested in contravention of national and international fishery rules should be destroyed unless it poses a health hazard.
84. Harvested IUU products may ultimately be certified and channelled to markets once sanctions have been imposed on perpetrators and have been serviced: this shall confer the status of legal provenance on the products.
85. As a minimum, any financial benefits accruing to perpetrators of fraud from IUU fishing shall be wholly forfeited under the sanctions imposed.
86. CPCs should, where necessary, revise national fishery laws to ensure that genuinely deterrent sanctions are available to them (see Paragraph 84).

87. Any financial benefit derived from IUU fishing additional to legal fishing operations should guide sanctioning authorities; this shall be done transparently.
88. States involved in cases of fisheries fraud as parties exercising jurisdiction as flag, port, market or coastal States should cooperate in terms of investigating, sharing evidence and imposing sanctions to the extent permitted under national laws.
89. States involved in cases of fishing fraud but not in agreement with the sanctions imposed by the flag State may refuse to counter-validate certificates and: i) a port State may prohibit a landing; or ii) a coastal State may refuse to lift an objection to a catch certificate. In all such cases the products concerned are barred from landing and international trade.
90. Catch certificates blocked by a coastal State or lacking port State counter-validation cannot be used as a source certificate to give rise to a trade certificate.
91. If a flag State imposes non-validation of a catch certificate as a sanction for established fraud, it shall validate the certificate and then block it to ensure that the certificate data are recorded in the e-CDS.
92. Validation of trade certificates should be refused by market States if mass-balance anomalies are detected, pending investigation. If fraud is established sanctions in line with the standards in Paragraph 85 should be applied, including the option of indefinite non-validation of submitted trade certificates.
93. States may refuse the importation of products covered by trade certificates flagged in the e-CDS as “over-used”^{*} pending clarification from the exporting State as to the outcome of investigations and any sanctions imposed. States may decide whether to accept or reject importation of the consignment on the basis of such information.
^{*} This means that the exporting State is exporting more product under a particular certificate than has been landed or imported into its territory.
94. In order to limit financial prejudice to legal operators in the supply chain, the blocking of upstream certificates cannot affect validated downstream certificates; it may only prevent future transactions from taking place with regard to the blocked certificate.

Role of the Executive Secretary

95. The Executive Secretary shall report annually to the Compliance Committee and the Commission with regard to the work in this respect.
96. A record of designated CPC competent authorities in charge of CDS matters will be established and maintained by the Executive Secretary.
97. The Executive Secretary shall promptly circulate all information about scheduled system downtimes, system malfunctions and solutions to CPC competent authorities and private sector users.
98. The Executive Secretary monitors the technical implementation of the e-CDS, assures the maintenance of the system, provides relevant training materials and courses for stakeholders, logs technical issues and solutions and proposes improvements to the Compliance Committee and the Commission annually.
99. The Executive Secretary liaises with CPCs with regard to mass-balance anomalies and records official CPC communications about resolution of the issues and, where applicable, sanctions imposed.
100. The Executive Secretary has full access to e-CDS data for oversight purposes, but may not share disaggregated data with any party other than the party that validated the data.
101. The Executive Secretary issues annual e-CDS reconciliation reports, as Stated in the User Manual. As a minimum, reconciliation reports shall cover the following:
 - a. Total Catch Report. An annual mid-year report on data from the year preceding publication covering total tuna catch by flag, month, species and gear type, based on

catch certificate data, which shall be compared with catch reported by CPCs and with TAC and quota allocations where applicable.

- b. **Mass-Balance Anomaly Report.** A report published two months before compliance committee meetings covering: i) mass-balance anomalies logged in the e-CDS by flag, farm, port or market State; ii) all relevant supply-chain transactions; iii) investigations and solutions to anomalies applied by CPCs; iv) the status of all listed certificates at the time of publication to be indicated – unblocked, blocked pending resolution or terminally blocked; and v) a compliance estimate in terms of product affected by mass-balance anomalies compared with the volume circulating in trade.
- c. **Supply Chain Report.** An annual mid-year report on data from the year preceding publication covering: i) product flows; ii) the main ports of landing; iii) the main processing States, re-processing States and end-market States; iv) the main imported product types; and v) an analysis of trends.
- d. **Apparent Domestic Consumption Report.** An annual mid-year report on data from the year preceding publication covering: i) apparent domestic consumption, by species, of all port and market States participating in the tuna supply chain, derived by subtracting the estimated green weight of products exported from the estimated green weight of products landed and imported; ii) analysis of long-term domestic consumption trends, by country, compared with domestic consumption figures from other sources; and iii) highlights of significant trend deviations.

Role of the Commission

102. The Commission shall request the cooperation of NCPs that are engaged in the fishing, processing or importation of species and products covered by the CDS, and encourage such States to join the Commission as CPCs.
103. The Commission shall annually review information on CDS implementation and compliance presented by the Secretariat.
104. The Commission will discuss proposals and take decisions with regard to improving implementation of the e-CDS, expanding its coverage or improving its effectiveness.
105. The Commission should invite other tuna Commissions to join the e-CDS if this is deemed to be advantageous.

Annexes I, II and III

[See the models in Annexes 1–3 of this paper.]

Annex I The Full Tuna Catch Certificate Model

HARMONISED FULL TUNA CATCH CERTIFICATE						
Catch certificate ID no.		[XX] – FCC – _____ – – – –				
RFMO	CCSBT	IATTC	ICCAT	IOTC	WCPFC	
Section 1. Fishing vessel identity						
Name of Master	Master's licence no.	Vessel flag	Vessel IRCS*	Vessel IMO no.	RFMO vessel ID no.	
Vessel registration no.	Vessel name	Fishing licence no.	Fishing licence validity	Licensed fishing areas		
JFO	Share of catch (%) – lead f.v.	Other f.v. in JFO	Share of catch (%)			
		1.				
		2.				
Section 2. Fishing dates & zones						
Fishing zone(s)			Period (from-to)			
Section 3. Catch table						
Fish to be unloaded from f.v.				Live transfer to farm		1 st pt. of sale (section 7)
Line #	Species	Product type	Product weight (est.) in kg	Ver. number of fish (live)	Ver. weight (live) in kg	Product weight (ver.) in kg
1						
2						
3						
Section 4. Flag State validation				Farm State c.-validation		
Flag State CA		Validation date		see Section 8.		
Section 5. Transhipment						
Name of Master	Master's licence no.	Reefer flag	Reefer IMO no.	Reefer RFMO ID no.		
Reefer registration no.	Reefer name	Licence no.	Licence validity	Licensed operating areas		
Reefer IRCS	Transhipment (sea /port)	Transhipment coordinates & name of port	Transhipment period (from-to)	Name of observer		

Section 6. Reefer Flag State and Port State counter-validations					
<i>Reefer Flag State CA</i>	<i>Validation date</i>	<i>Port State CA</i>	<i>Validation date</i>		
Section 7. First point of sale (or farm)					
<i>Port of landing or farm (coordinates & name)</i>		<i>Landing date (or date of caging)</i>			
<i>Name of agent</i>	<i>Company name</i>	<i>Company address</i>			
Section 8. Port / Farm State counter-validation					
<i>Port / Farm State CA</i>		<i>Validation date</i>			
Section 9. Second trade (ungraded bulk tuna)					
<i>Line #</i>	<i>Species</i>	<i>Product type</i>	<i>Product weight (estimate) in kg</i>	<i>Product weight (verified) in kg</i>	
1					
2					
3					
<i>Transport details (international trade only)</i>			<i>2nd buyer details</i>		
<i>Export destination (country)</i>	<i>Bill of lading / airway bill no.</i>	<i>Consignment weight</i>	<i>Name of manager</i>	<i>Company name</i>	<i>Company address</i>
<i>Date of exportation</i>	<i>Port of exportation</i>	<i>Port of destination</i>			
Section 10. Export State validation			Import State counter-validation		
<i>Export (Port) State CA</i>		<i>Validation date</i>	<i>Import State CA</i>		<i>Validation date</i>

* International Radio Call-sign System.

Annex II The Simplified Tuna Catch Certificate Model

HARMONISED SIMPLIFIED TUNA CATCH CERTIFICATE					
Catch certificate ID no.		[XX] – SCC – _____			
RFMO	<i>CCSBT</i>	<i>IATTC</i>	<i>ICCAT</i>	<i>IOTC</i>	<i>WCPFC</i>
Section 1. Buyer details					
<i>Name of manager</i>		<i>Company name</i>		<i>Company address</i>	
Mode of fish collection					
<i>at-sea using collector vessel</i>			<i>on land using refrigerated truck (or equivalent)</i>		
()			()		
Collector vessel details (if applicable)					
<i>Name of Master</i>	<i>Vessel flag</i>	<i>RFMO vessel ID no.</i>	<i>Vessel IRCS</i>	<i>Vessel registration no.</i>	<i>Vessel name</i>
<i>Fishing licence no.</i>	<i>Fishing licence validity</i>	<i>Licensed operating areas</i>	<i>Maritime area of fish collection</i>	<i>Landing location of collected fish</i>	<i>Landing date of collected fish</i>
Section 2. Fishing zones, dates & landing locations					
<i>Fishing zone(s) covered by all fishers / contrib. fishing vessels</i>		<i>Period covering all fishing trips (from-to)</i>		<i>Landing location(s) (for land-based collection only)</i>	
Section 3. Combined catch table					
<i>Line #</i>	<i>Species</i>	<i>Product type</i>		<i>Product weight (verified) in kg</i>	
1					
2					
3					
Section 4. Fishing vessel & catch table					
<i>Vessel name</i>	<i>Vessel registration no.</i>	<i>Fishing licence no.</i>	<i>Species</i>	<i>Product type</i>	<i>Product weight in kg</i>
Section 5. Coastal State validation					
<i>Coastal State CA</i>				<i>Validation date</i>	

Annex III The Tuna Trade Certificate Model

HARMONISED TUNA TRADE CERTIFICATE								
Trade certificate ID no.			[XX] – TC – _____					
RFMO			CCSBT	IATTC	ICCAT	IOTC	WCPFC	
Section 1. Product table								
<i>Preceding CDS source cert. ID no. (CC or TC)</i>	<i>Line no. (source)</i>	<i>Number of fish processed (farmed tuna)</i>	<i>Species</i>	<i>Original product type</i>	<i>Original product weight used in processing (in kg)</i>	<i>Resulting product type</i>	<i>Net drained fish weight after processing (in kg)</i>	<i>Net product weight after processing, including fish (kg)</i>
Section 2. Processor / exporter details								
<i>Name of manager</i>			<i>Name of company</i>			<i>Address of company</i>		
Section 3. Buyer / importer details								
<i>Name of manager</i>			<i>Name of company</i>			<i>Address of company</i>		
Section 4. Transport details								
<i>Country of export destination</i>	<i>Consignment weight (gross)</i>	<i>Bill of lading / airway bill no.</i>	<i>Date of exportation</i>	<i>Port of exportation (from)</i>		<i>Port of destination (to)</i>		
Section 5. Processing State validation								
Processing State validation				Import State counter-validation				
<i>Processing State CA</i>			<i>Validation date</i>		<i>Import State CA</i>		<i>Validation date</i>	

Annex 5 IOTC expenditure in 2021, & budgets 2022 to 2024 (latter indicative)

		Actuals 2021	2022	2023	2024
1	Staff costs				
1.1	Professional				
	Executive Secretary (D1)	194,950	194,797	209,731	213,926
<i>Science</i>	Science Manager (P5)	146,089	145,473	157,578	160,729
	Stock Assessment Expert (P4)	126,716	127,083	137,920	140,679
	Fishery Officer (Science P3)	97,898	96,944	105,643	107,756
<i>Compliance</i>	Compliance Manager (P5)	141,066	140,200	151,972	155,011
	Compliance Coordinator (P4)	133,861	134,717	143,330	146,197
	Compliance Officer (P3)	14,327	96,949	103,146	105,209
<i>Data</i>	Data Coordinator (P4)	128,836	129,837	137,920	140,679
	Statistician (P3)	97,705	96,944	105,643	107,756
	Fishery Officer (P2) Data	-	0	89,230	91,014
	Fishery Officer (P1) Data	62,743	63,145	69,083	70,464
<i>Admin.</i>	Administrative Officer (P3/P4)	123,567	124,965	128,190	130,753
1.2	General Service				
	Administrative Assistant	18,517	13,599	20,478	20,887
	Office Associate	15,649	11,174	17,430	17,778
	Database Assistant	18,525	13,595	20,478	20,887
	Office Assistant	11,277	8,373	13,121	13,384
	Driver	9,804	7,196	0	0
	Overtime	-	5,100	5,100	5,202
	Total Salary Costs	1,341,530	1,410,092	1,615,993	1,648,313
1.3	Employer Pension and Health	383,417	411,844	437,021	445,762
1.4	Employer FAO Entitlement Fund	579,938	703,368	670,875	684,293
1.5	Adjustment entitlement fund	(7,886)			
1.6	Improved Cost Recovery Uplift	66,613	73,234	78,993	80,573
	Total Staff Costs	2,363,611	2,598,537	2,802,883	2,858,940
2	Operating Expenditures				
2.1	Capacity Building	0	40,000	62,000	62,000
2.2	Co-funding Science/Data grants	-33,009	0	0	0
2.3	Co-funding Compliance grants	0	0	0	0
2.4	Misc. Contingencies	0	0	0	0
2.5	Consultants/Service Providers	202,958	588,200	542,400	542,400
2.6	Duty travel	0	165,000	165,000	165,000
2.7	Meetings	18,503	145,000	17,000	17,000
2.8	Interpretation	101,597	135,000	135,000	135,000
2.9	Translation	86,608	110,000	115,000	115,000
2.10	Equipment	16,166	25,000	35,000	35,000
2.11	General Operating Expenses	68,076	75,000	76,000	76,000
2.12	Printing	0	0	0	0
2.13	Contingencies	0	10,000	10,000	10,000
	Total OE	460,899	1,293,200	1,157,400	1,157,400
	SUB-TOTAL	2,824,510	3,891,737	3,960,283	4,016,340
3	Additional Contributions Seychelles	-122,831	-20,100	-28,750	-28,750
4	FAO Servicing Costs	120,983	175,128	178,213	180,735
5	Deficit Contingency	-	0		
6	Meeting Participation Fund	25,000	25,000	-	250,000
				-	-
	GRAND TOTAL	2,847,661	4,071,765	4,109,745	4,418,326

Source: IOTC-2022-S26-R[E] Appendix 6

<https://iotc.org/sites/default/files/documents/2022/08/IOTC-2022-S26-RE - Final 0.pdf>

project phase	time requirement	estimated costs
1. Detailed e-CDS concept paper	3 months	USD30,000
2. Kobe-type t-RFMO consultation and proposal (draft RESOLUTION)	12 months	USD250,000
3. Adoption/rejection of RESOLUTION by IOTC	6 months	USD -

project phase	time requirement	estimated costs
4. Developing a dedicated project for development of platform (wit TOR and CPC validation);	2 months	USD100,000
5. e-CDS platform development		
a. securing budgets and recruiting project team;	6 months	USD10,000
b. projections of data load and infrastructure needs;	1 month	USD 900,000
c. detailed description of individual e-CDS functions;	2 months	
d. deciding on programming language;	1 month	
e. purchase of installation of hardware and software;	2 months	
f. programming of the platform;	9 months	
g. internal testing	3 months	
5. Roll-out		
a. developing information and training materials (including printing)	6 months	USD50,000
b. training (content, targets, number of sessions and costs)	12 months	USD250,000
c. testing the system with CPCs	9 months	USD150,000
TOTAL DEVELOPMENT AND ROLL-OUT COSTS		1,740,000
6. Operation and maintenance	recurrent	75,000/year

Source: IOTC. 2018. MCS CDS Study.