The 2018 Atlantic Bluefin Tuna Trade Scandal: The catch & trade control framework of ICCAT and how to fix it

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About the Author

Gilles Hosch is an independent expert focusing on the development of systems to combat illegal, unreported and unregulated fishing. Over the past ten years, his work has centred to a large degree on market-related fishery control tools, foremost of which catch documentation schemes (CDS), their design, related traceability components, and the effectiveness of diverse implementation modalities applied across schemes today. Gilles has authored a number of formal publications on the subject matter, including three FAO Technical Papers, peer-reviewed papers, and items in the fisheries press. Over the years, Gilles has visited, critically discussed and exchanged information with ICCAT, CCSBT and CCAMLR, the three RFMOs currently operating CDS, many national administrations involved in these schemes, and has assisted other RFMOs in the development of their CDS agendas, notably WCPFC and, most recently, IOTC. Gilles has assisted dozens of countries exporting seafood to the EU in implementing and complying with the strictures of the CDS under the EU IUU Regulation.

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Acronyms

BCD	Atlantic Bluefin tuna catch document
BFT	Atlantic Bluefin tuna
CC	Catch certificate
CC_{est}	Catch certificate – containing estimated product weights
CC_{ver}	Catch certificate – containing verified product weights
CCAMLR	Convention for the Conservation of Antarctic Marine Living Resources
CDS	Catch documentation scheme
CCSBT	Commission for the Conservation of Southern Bluefin Tuna
CEPESCA	Spanish Fisheries Confederation
CMM	Conservation and Management Measure
DCD	Dissostichus catch document
eBCD	electronic Bluefin Tuna Catch Document (ICCAT)
eBCD TWG	eBCD technical working group (ICCAT)
E-BFT	Atlantic Bluefin tuna – eastern stock
eCDS	electronic catch documentation scheme
EFCA	European Fishery Control Agency
ICCAT	International Commission for the Conservation of Atlantic Tunas
ICIJ	International Coalition of Investigative Journalists
IMM	Working Group on Integrated Monitoring Measures (ICCAT)
IOTC	Indian Ocean Tuna Commission
IUU	illegal, unregulated and unreported fishing
MAPA	Ministry of Agriculture, Fisheries and Aquaculture (Spain)
PSMA	2009 Agreement on Port State Measures to Combat, Deter and Eliminate Illegal, Unregulated and Unreported Fishing
RFMO	Regional Fisheries Management Organization
SBT	Southern Bluefin tuna
SCRS	Standing Committee on Research and Statistics (ICCAT)
SVDCD	Specially validated Dissostichus catch document
PBT	Pacific Bluefin tuna
WCPFC	Western and Central Pacific Fishery Commission

Background

Atlantic Bluefin Tuna (BFT) belong to the class of bony fishes (*Osteichthyes*), they are large pelagic predators, and they have an astonishing biology. As odd poikilotherms, BFT are amongst the only bony fish capable of regulating their core body temperature to a certain degree, and count amongst the most evolved bony fish roaming the oceans. As most pelagic fish, BFT undergo seasonal migrations that span large swathes of ocean space. Two separate stocks with little mixing exist in the Atlantic; a western Atlantic stock, and an eastern Atlantic stock.

BFT is one of the most coveted and highly prized fishery resources in the Atlantic Ocean, and the adjacent Mediterranean Sea. BFT's range is limited to these two ocean basins. Historically, it has been the object of traditional fisheries, including the legendary *almadrabas* – the Spanish term for tuna trap fisheries – traced 3000 years back to the Phoenicians, and still practiced in Atlantic and Mediterranean waters, including those of Spain, Italy and parts of North Africa, to this day.

Owing to the high demand and the high prices that the resource commands today, its various fisheries, which were productive and stable for centuries, have come under ever increasing pressure, starting in the second half of the 20th century, and culminating at the confines of a looming eastern BFT stock collapse in the first decade of the 21st century.

The International Commission for the Conservation of Atlantic Tunas (ICCAT), based in Madrid, Spain, is one of the oldest Regional Fisheries Management Organizations (RFMO), and is responsible for the management of BFT fisheries – one amongst several other fisheries targeting highly migratory and large pelagic species that ICCAT oversees across its area of competence.

An international scandal of illegal trade in BFT, uncovered by the Spanish Guardia Civil in late 2018, involving operators in Member States of the European Union (EU), gave rise to the surmise that trade control measures put in place by ICCAT in 2008, specifically aimed at eliminating illegal trade – in the form of a catch documentation scheme (CDS) – may not be solid enough, and should be critically reviewed.

This report sets out to provide that review.

Introduction to the study

The work for this review was undertaken in the months of June and July of 2019. The author travelled to Malta and Spain in the second half of June, seeking meetings with national fisheries authorities, national police forces, private sector stakeholders (associations and companies), the ICCAT Secretariat, EUROPOL, the European Fisheries Control Agency (EFCA) and the Directorate General for Fisheries Affairs of the EU Commission (DG MARE).

Owing to the fact that operation TARANTELO, the police investigation into the uncovered illegal Bluefin tuna trade, was still ongoing and that the judiciary proceedings had started in Spain and in Malta, there was a general reticence by parties to meet and discuss events, and the ICCAT trade measures reviewed in this document. This resulted in the fact that the author was not able to meet with a single government agency (including the police), neither in Malta nor in Spain, nor with the ICCAT Secretariat, nor with EUROPOL. However, both the Spanish Ministry of Agriculture and Fisheries (MAPA) and the ICCAT Secretariat agreed to answer questions submitted to them via email, an offer that MAPA later withdrew, indicating that DG MARE was uniquely mandated to respond to all questions. This resulted in a very limited exchange of information with the ICCAT Secretariat. No responses other than those from the ICCAT Secretariat were received before the finalisation of this document in late July. EFCA had initially agreed to a face-to-face meeting, and later to a skype meeting, but was eventually unable to identify a convenient slot to hold such meeting.

Both in Malta and in Spain, the author met with a very limited number of private sector stakeholders. In Malta, stakeholders hailed from the fishery, rather than the farming side of the sector, and all parties met with requested anonymity. In Spain, a single, yet very productive meeting was facilitated by the Spanish Fisheries Confederation (CEPESCA), with the participation of *Balfegó*, one of the most important Spanish Bluefin tuna harvesting, fattening and trading companies.

The limited direct interaction that could be achieved with stakeholders, of which none with national or regional authorities, nor the ICCAT Secretariat, put a spanner in the wheels for most direct eBCD assessment efforts, its electronic interface, and the functions that are part and parcel of the package currently in use at the level of authorities – and system administrators.

Not only could the eBCD interface not be assessed directly over the course of this work, but the user manuals could only be consulted late into the work, having been made available by a sympathetic private sector user who downloaded them and made them available; user manuals did provide insights into system capabilities and functions on the private sector side. User manuals are hosted on the password protected portion of ICCAT's website. A document harbouring detailed system function descriptions could not be located online, and there was an overall lack of support and guidance from any and all official sources. Third parties are fully excluded from accessing basic eBCD system information that would allow them to understand its nature, and to analyse its design.

The assessment contained in this document is thus largely – albeit not exclusively – built on contrasting the ICCAT regulatory framework relating to the eBCD and its implementation, against the various guidelines on good CDS practice and design that have been published in recent years. The

assessment focuses more on primary system strengths and weaknesses, rather than practicalities and details that would have come to the fore if more direct interactions with authorities using the system and its interface had been possible. Therefore, also, direct linkages and causal effects between the current nature of the eBCD, and the recent illegal trade scandal are not the immediate object of this assessment, though reference is made in given instances.

This does not diminish the value of this work. To the opposite, it provides an opportunity to unhinge and unclutter the assessment from the recent illegal trade scandal, and to focus on the semantics of what constitutes a solid CDS, and to explore in what ways ICCAT's eBCD and the related MCS framework could or should evolve and improve in the future.

The assessment contained in this document focuses exclusively on the eastern BFT stock, its fisheries, and the associated fattening operations and trade. This focus has no bearing on the general validity of the assessment of the eBCD *per se*, which is valid for the BFT fishery and farming operations in their totality.

1. The 2018 scandal of intra-EU illegal trade in Atlantic Bluefin tuna

At the time of writing, the investigations and judicial proceedings related to operation TARANTELO were ongoing, and the majority of information that could be gathered to inform this report originates from press releases, and stakeholders with some knowledge about what is (or seems) to be known regarding what has occurred.

1.1 Recent historical background

At the beginning of the new millennium, purse seining for BFT, transfers to farms and fattening operations had just commenced. Traditionally, BFT was harvested primarily by longliners and traps. The way of harvesting spawners in seine nets without killing them, transferring them to holding pens (farms), and fattening them by feeding them dead fish, is a development of the mid-nineties, developed as a way to further grow the fish, and to boost its fat content. Both results would create avenues for increasing revenue derived from the fishery. Japan was the dominant target market for this production in the early years and remains very important.

Markets evolve over time, with European and American markets for sashimi-grade tuna products growing in importance more recently, while Japanese demand for sashimi-grade tuna overall has contracted substantially over the past decade. However, demand for fattened BFT in Japan remains strong.

The nineties and the first decade of the 21st century developed into gold rush years in the eastern BFT fishery, and the associated fattening operations. TAC and quota overfishing by otherwise legal entities quickly evolved into the biggest challenge to the health and sustainability of the eastern BFT stock, and governments such as those of France, Italy and Spain – operating the lion's share of purse seiners targeting BFT in the Mediterranean – did not do enough to enforce the quotas allocated to their fleets, and to ensure that "stop fishing" notices were issued to their operators when quotas had been filled.

A 2007 EU Court of Auditor's report found that none of the major EU fishing nations had data collection and monitoring systems in place that would have allowed them to effectively monitor the filling of quotas by their vessels and fleets in real time, and to close quota-managed fisheries at the appropriate time – including those targeting BFT.[1]

In the late-2000s, ICCAT's Standing Committee on Research and Statistics (SCRS) started to run an exercise that had rarely been undertaken by a body of its nature. On the basis of biological data and the official catch data submitted to it, it set out to estimate the magnitude of the missing catch not reported by the sum of ICCAT CPCs – translating into an estimate of unreported over-quota IUU catches. The estimates were staggering, estimating that in 2007, the TAC of 30,000mt was

[1] See Bibliography and References: EU Court of Auditors (2007)

overharvested in excess of 100% (see figure 1). The SCRS uses these estimated total harvests in stock modelling today, rather than the harvests officially declared by CPCs at the time.

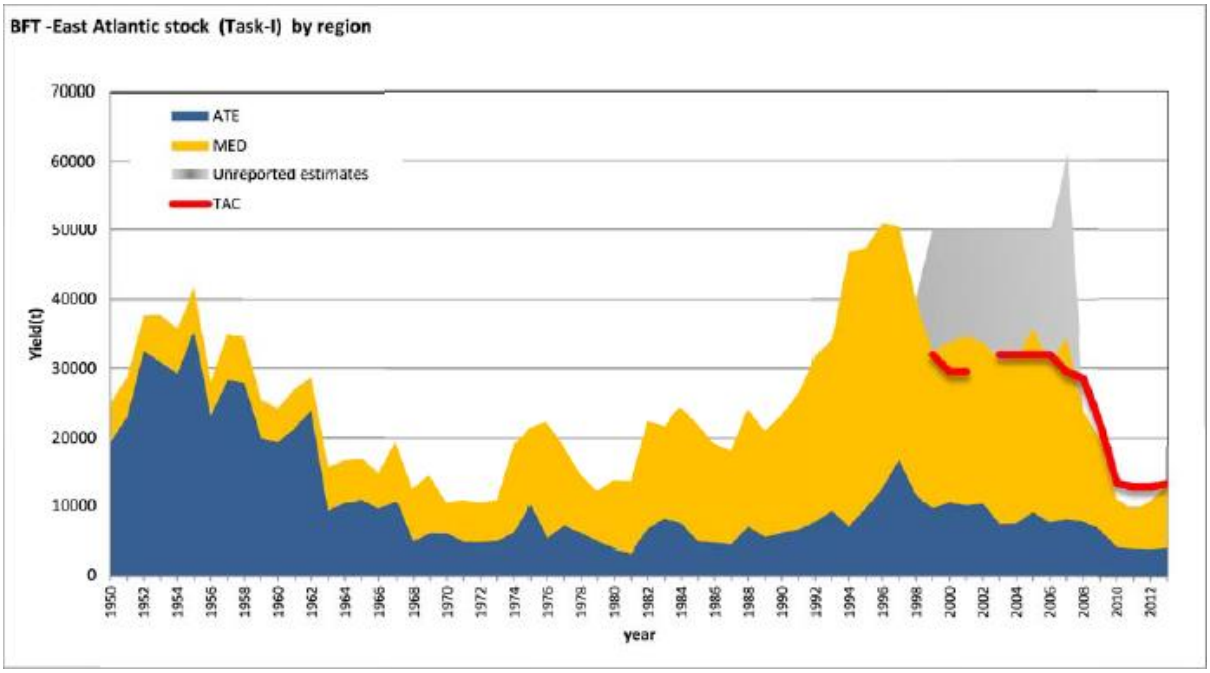

Figure 1. Showing BFTE-Figure 1 of the 2015 biennial SCRS report (ICCAT 2015), showing the estimated unreported catch in grey, during the years following the putting in place of TACs for eastern Atlantic Bluefin tuna.

The value of the BFT IUU catch and trade over a decade, located between the late nineties and the late 2000's, was estimated to be in the order of USD 400 million per year – totalling an estimated four billion over that decade. The business and revenue facilitated through the absence of solid oversight and enforcement at the level of flag State – flag States largely, but not exclusively, made up of EU member States – and at the level of "farming" States operating fattening facilities, was enormous.

At the term of that same period, the acclaimed International Coalition of Investigative Journalists (ICIJ) launched an independent investigation into the Mediterranean Bluefin tuna racket, and much of what is known today stems from the well-researched news items published by the ICIJ on the topic in 2012.

Following a challenge through CITES that BFT should be designated as a critically endangered species, which would have signified the end of international trade, and the commercial death of the fishery, ICCAT Members agreed to develop and implement a CDS, allowing it to control trade flows, and through that, ensure that no more tuna was going to be traded by any given party, than the quota to which it was entitled.[2] The CMM on a BFT CDS was adopted in 2007 (CMM 07-10), and entered into force the following year.

[2] The proposal to ban BFT trade through CITES was tabled by Monaco and was voted down at the triennial general assembly of CITES on 18th March 2010.

Japan, the most important global single-State importer of BFT at the time, implemented the scheme with resolve, and as of late 2009, more than 3,500mt of BFT had been denied importation[3] – the largest share stemming from fattening operations located in Mediterranean EU States. This amount equated to a sixth of Japan's annual bluefin tuna imports. A high level delegation of the EU travelled to Tokyo in mid-2010, to negotiate the release of BFT consignments that had holes and inconsistencies in the paperwork; of BFT that had been fattened at biologically impossible rates; from fattening operations that had harvested/exported more fish than had been caged; and of BFT that did not meet the minimum legal size. While Japanese authorities eventually gave in to the diplomatic efforts of EU officials and released the majority of consignments into their market, the novel Japanese stance chimed in the end of the fat years.

With the CDS in place, ICCAT's rebuilding plan for BFT launched in 2006, complete with TACs and quotas, adopted since 1999, gradually started to produce results. The signals in certain CPUE data as of 2012 suggested that a stock recovery was underway, and in 2014, Spanish operators reported to have caught their annual quota within a mere 48 hours. The SCRS estimated that total catches largely started to fall in line with the TAC following the adoption of the CDS in 2008 (see figure 1).

In 2012, ICCAT started the development of an eCDS, on the fundaments of the existing CMM 11-20, and in 2014, the first CPCs started to test the system. By 2016, the development of the system had costed ICCAT in excess of Euro 1.6 million (ICCAT 2016a). It is estimated that eBCD system development and maintenance had exceeded Euro 2 million at the time of writing.

However, these developments did not spell the end of illegal fishing and trade of BFT. In 2015, MedReAct published a list collated from Italian newspaper stories, showing that illegal fishing by commercial and recreational fishermen (the latter generally caught selling their catch into retail) continued unabated – albeit at a seemingly more limited scale – feeding for the most part national black markets. Under their current paradigms, CDS are designed to accompany fish in international trade, and are inherently weak or unable as a tool to monitor and detect illegal trade of the domestic type.

It has been reported elsewhere that the phenomenon of illegal smaller-scale catches targeting black markets is not limited to Italy, but is a phenomenon that is likely to touch a large number of Mediterranean countries. With the growing strength of the European export market for sashimi-grade tuna products, foremost of which Bluefin tuna, this challenge is unlikely to quietly disappear – quite to the opposite, as the recently uncovered trans-European trade of illegally harvested BFT suggests.

1.2 Operation Tarantelo

In September 2017, a number of seafood poisoning events in Spain, related to the consumption of tuna products, led to a first investigation by the health authority of the Junta de Andalucia. This investigation was quickly turned over to the Guardia Civil (police), and culminated in the arrest of 79 people in mid-October of 2018 – for their alleged participation in the illicit trade of large amounts of illegally harvested bluefin tuna. Europol became involved in the complex operation – named

[3] It is estimated that this volume equated to a commercial value – not reported at the time – at the farm gate of at least Euro 100 million.

"Tarantelo" – and police investigations were also carried out in other EU States, including those of Italy, Portugal and Malta.

Much of what is known of the case today stems from a leaked document of the Spanish Guardia Civil, picked up by the press, and released in newspaper articles. Some of this information is contradictory, and lacks the necessary detail to understand exactly in which ways the existing national and ICCAT monitoring and traceability systems/mechanisms were circumvented, or might have assisted in the perpetration of violations – through existing weaknesses and gaps – but the general emerging picture renders the following information:

- The illicit trade of illegal bluefin tuna catches has been going on for years, and spans an arc involving many, if not most countries of the northern Mediterranean, as originators of the products, as well as markets for their consumption; with Spain likely to embody the most important market.
- Identified sources of the illegal BFT are Maltese fish farms, as well as Italian fishing boats landing catches in Italy. It is highly unlikely that actual sources are limited to those two groups of operators. And in the case of the Maltese fish farms, it remains to be established what the sources of the non-recorded and illegal BFT held and fattened in the farms are.
- Trading routes of illegal BFT from Malta into Spain – the pair of countries prominently involved in the illegal trade – are diverse. They include trade by sea – partly aboard recreational craft entering small Spanish ports in the middle of the night – freight transiting by road in concealed truck compartments, and regular airfreight flying into the airport of Madrid.
- It is understood that all airfreight consignments into Madrid were covered by official paperwork, and that much of the other trade was of the smuggling type, by-passing official customs, health and other controls.
- It is established that the conglomerate of *Ricardo Fuentes y Hijos*, one of the most important Spanish tuna farming operators, was the mastermind behind the trade at the receiving end in Spain, and that a number of companies operated by the conglomerate were used as channels to receive, pay in cash (or in kind – jewellery, luxury cars, etc.), and issue false ICCAT BCD documents. The latter were issued at least in part through a *Ricardo Fuentes y Hijos*-owned company called VIVER-ATUN Cartagena SA.
- In what exact way ICCAT documents were falsified, and in what manner the derogations applying to intra-EU trade – or tagging in substitution of documenting – facilitated this crime, cannot be understood from the information currently available in the public domain. However, it is understood that the lacking trade-specific information on the BCD certificates (bill of lading, airway bill, etc.) may have facilitated the fraud of sending the "same" consignment into Spain twice via two different routes, while the trade will only have been recorded once on ICCAT's eBCD interface.
- It appears that there was knowledge of the trade, and collusion between the Maltese fisheries regulator and the *Ricardo Fuentes y Hijos* group, and that the Maltese administration failed in its duty to uphold the law. This has led to the indefinite suspension of the Maltese Director General of Fisheries – on full pay – in the early months of 2019.

- In Malta, two fish farms were implicated from the beginning, namely Mare Blu and Malta Fish Farming (MFF), the former also owned and operated by the *Ricardo Fuentes y Hijos* conglomerate.
- The yearly volume and value of illegal BFT traded into Spain was estimated at some 2,500mt for a value of about €23 million, with the assumption that this trade had been going on for a number of years. This level represents 15.2% of officially declared catches of eastern BFT in 2017, and 18.6% of the total 2017 EU quota.
- BFT not covered by (falsified) BCD documents were selling for €8.5/kg, while those covered by documents were selling at €10.5/kg on average.

Given that the above figures of estimated illegal volumes only cover illegal BFT traded into the Spanish market, and knowing that other markets such as those of Italy and Malta have also had BFT black markets identified and reported on in the recent past, it is reasonable to conservatively surmise that IUU fishing and illegal trade of BFT in the EU may still be hovering in the order of 40 to 50% beyond and above its quota entitlements.

This would mean that quota overfishing in excess of 100%, as established by the SCRS for the year 2007, may only have fallen by a little more than half over the following decade – with regard to EU-related operations revealed through operation Tarantelo.

2. Guidelines for Catch Documentation Schemes

Given that little of the details of how exactly the BCD and other monitoring systems may have been defrauded by the actors that sustained the illegal trade of BFT between Malta and Spain, it is useful and necessary to look to other sources to inform the assessment of ICCAT's eBCD.

Such sources can currently be found in a number of voluntary instruments and technical papers, all of which have been published by the FAO. In general terms, these sources provide guidance on principles, their application, system design elements, CMM elements, and functions that a solid CDS should be endowed with. Looking at the recent FAO work for guidance is amply justified, not only because it is bye and large the only formal work on CDS available today, but also given the following statement by the working group on integrated monitoring measures (IMM) in 2018: "Inspiration from other catch document programmes and recent work of the FAO may also be used to improve the programmes used in ICCAT."[4]

2.1 FAO IPOA-IUU

The oldest reference in existence on CDS stems from the 2001 International Plan of Action to Combat, Deter and Eliminate Illegal, Unreported and Unregulated Fishing (IPOA-IUU), one of the four action plans related to the 1995 FAO Code of Conduct for Responsible Fisheries. The IPOA-IUU paragraphs covering CDS are grouped under the heading "Internationally Agreed Market-Related Measures".

The IPOA-IUU posited a number of characteristics a CDS should have, the most important of which are that they should be multilateral as constructs, fair, transparent and non-discriminatory in nature, that they should be species or stock-specific, that trading in IUU-products should be made an offence by States (insisting on market State responsibilities), that certification and documentation ought to be standardized, that schemes should be electronic and effective, and that unnecessary burdens on trade should be avoided. All of these individual characteristics remain of utmost, and critical importance.

2.2 FAO Voluntary Guidelines on Catch Documentation Schemes

The FAO voluntary guidelines on CDS, adopted by the FAO council in July 2017, pursue the objective "to provide assistance to states, regional fisheries management organisations, regional economic integration organizations and other intergovernmental organisations when developing and implementing new CDS, or harmonising or reviewing existing CDS." (highlights by the author). This fully validates the reference made to the guidelines in the context of this document.

[4] Report of the 12th Meeting of the Working Group on Integrated Monitoring Measures (IMM) (Madrid, Spain, 9-12 April 2018)

The guidelines lay out the de facto objective of a CDS in the following manner: “Every effort should be made to ensure that CDS are only implemented where they can be an effective means to prevent products derived from IUU fishing from entering the supply chain.”

This mirrors the objective pursued through trade-related measures as provided in the 2008 FAO International Guidelines for the Management of Deep-Sea Fisheries in the High Seas: “adopt […] measures to prevent products from IUU DSFs from entering international trade.” It also reflects the provisions of the 2001 FAO IPOA-IUU on the same topic: “[…] to prevent fish caught by vessels identified […] to have been engaged in IUU fishing being traded or imported into their territories.”

The notion that a CDS must be able to effectively prevent IUU-derived product from “entering” the supply chain is key. If mechanisms inherent to the CDS do not allow for the detection of IUU fishing operations, and IUU-derived products are able to gain certification and to migrate as legally certified products along supply chains towards their end-markets because of this, then the CDS cannot contribute significantly to eliminating IUU fishing.

The guidelines also provide that CDS should only be implemented “from within the context of an effective fisheries management regime”. This is critical, since the lack of effective management rules regarding the exploitation of given stocks implies a lack of substrate for a CDS to act upon.

The development and use of “secure electronic systems” for the operation of CDS – in order to forego “the risk of falsification” – is also provided in the guidelines. Key attributes and functions that electronic systems should be endowed with are listed, including the following:

1. Serve as the mechanism for issuance and validation of catch certificates;
2. Function as the repository of catch certificate and supply chain data;
3. Allow verification of information;
4. Ensure that accurate and verifiable information is available along the supply chain;
5. Be based on international standards for information exchange and data management;
6. Minimise the burden on users;
7. Provide functions for uploading scanned documents;
8. Provide functions for running data queries;
9. Define roles and responsibilities for data input and validation;
10. Provide secure access via logins and passwords; and
11. Define system levels that individual users or user groups have access to.

Certificates should be issued and validated through an electronic system, which serves both CDS functions of data generator/validator and data warehouse (points 1 and 2) allowing data to be linked (point 5) and to remain available and accessible along the entire supply chain (point 4).

This embodies a central data registry. The central registry is the centre-piece that provides the basis for effective supply-chain traceability, and allows a CDS to effectively meet its objective. It is this instrument that enables meaningful verification of information (point 3), either in manual or automated fashion, along the entire supply chain from harvesting of fish to the final point of importation of fisheries products, and provides the ability to detect (and to deny) laundering attempts, by ensuring the consistency of mass balance between trade events. In the absence of a central registry, or the recording of partial information, verification of information becomes difficult,

and in longer supply chains, operators may be unable to establish the validity of the paperwork accompanying consignments delivered to premises, or – in the case of authorities – to establish the legality of products imported into territories.

Other attributes and functions provided for in the guidelines – generally relating more to CDS development and implementation modalities – include the following;

1. States should seek wide multilateral engagements in the development and implementation of CDS;
2. Cost-effectiveness […] should guide […] the development and implementation of CDS;
3. Multilateral or regional CDS are preferred;
4. The objective of a CDS should be clearly defined;
5. The CDS should be designed to meet its objective;
6. Applicable Harmonized System (HS) classifications should be listed;
7. In the validation process, different roles of relevant states to authorise, monitor and control fishing operations and verify catch, landing, and trade should be fully recognised;
8. Validation of catch documentation information should be done by a competent authority;
9. All relevant states could take part in the verification of information in the catch documentation.

It emerges that multilateral approaches are preferred in developing CDS (points 1 and 3).

Points 4 and 5 – notwithstanding their obviousness – are important also. None of the existing RFMO-based CDS define the objective of the scheme in a satisfactory manner (including ICCAT), and can therefore become prone to meander, to add functions not in support of often assumed objective(s), and can become burdensome, ineffective and less cost-effective over time. CDS functions can only be confidently developed when an agreed and clear objective is pursued.

The definition of the HS categories (point 6) to which the scheme applies is important also, and sometimes embodies an alienating factor for fisheries practitioners. Since the CDS is a trade-based tool, and is largely implemented through the action of border control agents and the customs agencies they respond to, the translation of fish species and fish products into customs codes is of essence to ensure the smooth implementation of envisaged controls at the level of international trade. This in turn assists in identifying the need for developing more detailed HS codes in specific fisheries and supply chains over time.

Another key point relates to the State-types responsible for verifications and validations of certificates (points 7 and 9). Under international law, both the coastal state and the flag state have shared responsibility to oversee fishing operations in the EEZ. Expanding verification and validation competence in future systems serves the purpose, *inter alia*, of limiting the primacy of flag State validation in the CDS landscape. Trade-based and port-state measures – the latter enshrined in the 2009 Agreement on Port State Measures to Combat, Deter and Eliminate IUU Fishing (PSMA) – ought to be understood as efforts to overcome the shortcomings of flag State jurisdiction and enforcement, and to spread duties and responsibilities for combatting IUU fishing more evenly among concerned state parties.

Finally, an act of validation of catch documentation by a designated competent authority is a hallmark of catch documentation schemes (point 8).

Maybe the most important shortcoming of the FAO 2017 Voluntary Guidelines on CDS is that it fails to provide any guidance on the document system, and the certificates underpinning the CDS. The way these documents are designed, how they link to each other, and how information flows between them is critical to ensure traceability and impermeability along complex supply chains where consignments are often split and/or regrouped, and products change form. The CDS document system embodies the traceability core of the CDS, and guidance on that particular subject matter is provided in detail in the technical papers covered below.

2.2 FAO Technical Papers on CDS development and design options

FAO has published three Technical Papers in 2016, 2017 and 2018, all three focusing on various aspects of CDS development and implementation. The first one in the series (TP596), published in 2016, is the most relevant for the purposes of this assessment, and is entitled "Design options for the development of tuna catch documentation schemes". The second one, published in 2017 (TP619), is entitled "Seafood traceability for compliance: Country-level support for catch documentation schemes", and focuses primarily on how national MCS systems ought to be laid out to support the effectiveness and successful implementation of CDS. The third one (TP629) is entitled "Catch documentation schemes for deep-sea fisheries in the ABNJ: Their value and options for implementation" and contains a more limited number of elements directly relevant to the assessment contained in this document.

The following paragraphs summarise in a succinct manner the key guidance developed in these papers. In order to keep this section relevant and to the point, only those of most bearing in the context of ICCAT's eBCD, and not mentioned in the previous sections, are covered.

The design of the document system, invariably consisting of a combination of catch and trade certificates across all CDS in existence, needs to be solid. Certificates must regroup all key data elements that are needed to achieve traceability. Rules as to how many documents of which type are issued (filled and validated) under which scenario, at what time and by whom, must be developed, so that all scenarios likely to occur in a fishery and along the supply chain may effectively be accommodated by the system. Scenarios relate to split landings, splits after landings, re-grouping of several certificates into a single trade certificate, processing and re-processing, the raising of trade certificates, completeness of data, etc.

Rules for the recording of estimated and verified weights under different scenarios must be provided, bearing in mind that in many fisheries, it is impossible to establish verified weight of products to be offloaded before fish is transhipped, transferred or landed. Mechanisms to migrate estimated weights to verified weights in catch certificates issued prior to landing must be given for all scenarios and must be applied equally by all stakeholders across the scheme in order to avoid bias, fraud, and maintaining a level playing field. (see figure 2 also)

A paper-based scheme does not and cannot function in the same way as an electronic scheme. Therefore, the rules applying to a paper-based scheme cannot simply be transposed 1:1 to an electronic system, since both schemes are not directly compatible. In electronic schemes, near-real

time pooling of data, recorded in a central registry, and real-time monitoring and control along the supply chain can (and should) be achieved, while in paper-based systems, information can only be analysed weeks or months after transactions have taken place, and copies of paperwork and data are received by the office collecting them. This entails, that when a paper based CDS migrates to an electronic platform, the CMM underlying the CDS must be fundamentally revised, in order to define, regulate and develop the largely superior monitoring and enforcement functions the electronic system could (and should) have. Failure to do so is equivalent to fitting a combustion engine to a horse cart, and then relying on the horse to continue pulling it.

The data links between subsequent trades, translating into certificates and their datasets in the electronic scheme, need to be meticulously designed and regulated, in order to ensure a perfect match, and full traceability between certificate pairs. This is the nexus of CDS traceability, impermeability, and the mechanism that denies non-originating (IUU) fish from entering legal and certified trade and markets.

The functions of the catch certificate and the trade certificate should be separated. Under paper-based systems, it is understandable that catch certificates under the various schemes generally contained sections on trade, however, in electronic systems this is undesirable and unnecessary, and trade transactions should be entirely relegated to trade certificates. On the other hand, transfer and caging operations can (and ought) to remain part and parcel of the catch certificate. This entails that up to the time of harvest, kill and first sale, a catch certificate is issued, and a trade certificate thereafter, regardless of whether that trade embodies a first a second or later (re-) exportation. See figure 2.

Tuna fattening supply-chain analogies

Supply-chain events, analogies and certificates issued					
Regular supply chain	Capture	Transhipment	Landing to factory	Processing	Export
Certificate	CC_{est}*		CC_{ver}**		Trade certificate
Farming supply chain	Capture	Transfer to tow cage	Transfer to farm	Fattening & harvesting	Export (incl. dom. market)
Certificate	CC_{est}		CC_{ver}		Trade certificate

* Catch certificate issued on the basis of estimated weights. (see Chapter 5)
** Catch certificate issued on the basis of verified weights, following landing and grading, or confirmation of estimates. (see Chapter 5)

Figure 2. Showing table 7 of FAO TP596 (page 29), showing supply chain analogies between regular fishing operations, transhipment, landing, processing and exportation on one hand, and the farming supply chain, with fishing, transfers, fattening/harvesting and exportation on the other. The table provides for the points in the supply chain when estimated weights are confirmed, and when catch certificates (CCs) and trade certificates ought to be used.

A well-designed CDS, through its document system, traces harvests (for which a catch certificate is issued) to the place of landing, transfer or transhipment and the first buyer / or farm (all recorded on the catch certificate), and then records exports of the same products in a trade certificate. The latter links the products and their form to the original catch certificate (or the preceding trade certificate in case of a re-exportation), allowing to deduct the exported volume from the volume the first buyer

(and any subsequent buyer) acquired through the certificate handed (or ascribed) to him/her. A CDS is thus limited to recording offloadings, first purchase/caging, exportation, importation, re-exportation, importation, etc. – until the final consumer market is reached, and the product does not re-emerge in international trade. What no CDS currently traces, are internal or national transactions of product sold by the first buyer or the importer into the national market – neither for consumption, nor for processing and re-exportation. In markets where national consumption is an important avenue – such as Spain – this is a problem, as acquired portions of certificates sold into the national market for national consumption – and which will not re-emerge in international trade – are not discounted from the stock holdings established through the CDS; operators selling into the national market end up with "ghost fish credits" within the CDS registry – which constitutes a loophole and an opportunity to launder IUU products into the certified supply stream. The other important issue is that, the CDS not being designed to neither certify nor trace national sales transactions, there is no eCDS-bound mechanism of certification that could be used to ensure that those transactions are monitored and required to show proof of legality – regardless of any national traceability legislation that might – or might not – address this gap. This implies that once a Bluefin tuna has successfully crossed the border into a country, there is no CDS-bound mechanism to prove or disprove its legality, facilitating the national marketing of illegal catch – including those catches that have been smuggled into the country across the border or through unreported landings – as has been reported for last years' illegal BFT trade scandal into Spain.

Yield factors in an electronic system have to be pooled and monitored, in order to establish the normal distribution of average yields between given product pairs (e.g. from ROUND to LOINS), so that the system may be designed to issue an alert when a product yield exceeds the limit set by the system (the limit can be set at 2 standard deviations from the mean, for instance). Such alerts would assist authorities in identifying trades where fraud might be underway, and where an inspection ought to be ordered, before documents may be validated.

Electronic systems ought to come with a number of functions that are exclusive to these systems. These include alerts, automated blocks, and reporting (or data query) functions for users. Reporting back to the Commission on eCDS implementation should become largely superfluous as far as data are concerned, as reports can be generated automatically by the Secretariat.

Infractions relating to the operation of the CDS must be identified through the CMM establishing the CDS, in order to provide for a schedule of applicable minimum sanctions that must be applied in case of detected infringements. In the absence of minimum sanctions schedules, and owing to the international framework, the tendency is generally for States to opt for leniency, undermining the effectiveness of the system over time.

The CDS must cover all commercial harvests, and there should be no parallel mechanisms or systems to identify and record the fish in substitution of the CDS – including tagging options. Any parallel mechanism – whether for science or compliance purposes – should work in the sense of strengthening the CDS, not in the sense of weakening, undermining or partially substituting it.

Identified IUU product should never be destroyed (unless it represents a health hazard), and should not be allowed to evolve outside of the CDS once it surfaces. Certificates for detected IUU products should be issued, and validated, once the applicable minimum fines have been serviced. CCAMLR's "specially validated" catch certificate is the best practice model currently in existence.

All countries participating in the scheme should be subjected to the same standards and rules, and derogations and special regimes for “special” stakeholder groups and interests should be avoided altogether.

3. The ICCAT Catch Documentation Scheme covering Atlantic Bluefin tuna

This chapter is segmented into four main sections, which cover the following principal questions, and contain the bulk of the recommendations. The first section covers the resolutions directly defining and regulating the eBCD, assessing how the regulatory substance has evolved, and what can be said about that. The second section covers eBCD design and gaps proper. The third section looks at the specific questions of derogations for given CPCs and tagging of tuna in substitution of issuing BCDs. The fourth and final section assesses the related CMMs that regulate the ways in which Bluefin tuna must be channelled from fishing vessels to farms, the applicable control framework, and how this interfaces with, and is supportive of the eBCD.

3.1 The core ICCAT recommendations on CDS: CMM 18-13, CMM 18-12, CMM 13-16, CMM 13-17 and CMM 10-11

CMM 11-20 "Recommendation by ICCAT amending Recommendation 09-11 on an ICCAT Bluefin Tuna Catch Documentation Program" lays down ICCATs CDS. As its title suggests, it replaced an earlier version of the same recommendation (CMM 09-11), which itself had replaced the original recommendation, CMM 08-12, adopted in 2008.

The BCD entered into force in mid-2009, some amendments were effected and entered into force in 2010, and the BCD in its current form continued implementation in mid-2012, based on the provisions of the CMM that was still in force when the work for this report started (CMM 11-20). CMM 11-20 was replaced by CMM 18-13 in 2018, and entered into force on the 21st June, 2019. The amendments are minor, and essentially limited to the reporting period for CPCs on BCD implementation, and an added provision under para. 13 b), providing that the value of over-quota BFT is to be confiscated, that BCDs may be validated, but that the products cannot enter trade.

While CMM 10-11 on an electronic Bluefin tuna eBCD provided quite a few non-binding leads as to how an electronic scheme could evolve towards providing enhanced compliance functions, amongst others, (*e.g.* para. 4 "The system can be customized for error and/or non-compliance prevention […]"), such non-binding provisions in a binding recommendation are of no tangible value, as they have no legal currency, and cannot be transposed and applied to the system to be developed. However, CMM 10-11 shows that the lining up of potential new and much more powerful BCD functions, requiring binding provisions, was understood at that point in time. Three years later, with the development of the electronic interface far advanced, CMM 13-17 was adopted, stating in its paragraph 6 that "The substantive provisions of Recommendation 11-20 will be applied *mutatis mutandis* to the electronic BCDs. The Permanent Working Group assisted by the eBCD Technical Working Group will consider whether a comprehensive eBCD program recommendation is necessary and, if so, will submit that recommendation and the related technical manual to the Commission for its consideration at the 2014 Annual Meeting." The insight gained three years earlier, and noted above, is thus rolled back, and the need for a "comprehensive eBCD program recommendation", *i.e.* a new and dedicated CMM defining the new system and its upgraded functions – and implications

for binding provisions – becomes optional, and may be adopted following the development of the system. ICCAT ended up developing the eBCD back-to-front. The regulatory substance guiding the development of the electronic CDS remained largely the same which had been developed for, and underpinned the paper-based BCD system. New functions and enhanced capabilities that would have required new binding rules could not be developed for the new system – largely forfeiting and sacrificing the potential for the electronic system to upgrade monitoring and enforcement capabilities.[5]

Only in 2015 was CMM 15-10 (then CMM 17-09, and now 18-12) on the application of the eBCD system adopted. It entered into force in 2016. It was developed, adopted and entered into force several years after the electronic eBCD interface had been developed.[6]

While the regulatory substance of RFMOs such as NAFO and NEAFC have evolved in recent years in matters of streamlining, through the consolidation of heteroclite assemblages of CMMs into a consistent and coherent single regulatory text, ICCAT finds itself headed into the opposite direction, where instead of evolution and consolidation, several CMMs are born that all serve the part – entirely or partially – to (co-)regulate the eBCD, while the foundational (or mother) CMM does not evolve at all in the face of the needs that the modernisation (digitalisation) of the BCD requires.

With CMM 15-10, now in its third iteration as CMM 18-12, ICCAT creates a set of parallel rules, which partly complement CMM 18-13, partly contradict or suspend provisions thereof, and partly create additional rules. The amendments of CMM 13-16 (minor), applied to CMM 11-20 are not reflected in CMM 18-13 – nor mentioned in the preamble. CMMs 18-13, 18-12 and 13-16 have to be read in conjunction with each other – *inter alia* – in order to understand what rule applies, and which one does not, while a consolidated text does not exist. Overall, the assemblage of texts falls short of what substance a CMM for an eCDS ought to cover (see following sections).

In addition to this, the discussion on developing further CDS solutions for other tuna and tuna-like resources remains alive, without having reached any major milestone in close to a decade.[7] It is apparent from the various working group reports, that there is no clear understanding, nor any agreement on whether one (*i.e* the existing) CDS should cover any of the other resources to which a CDS could or should apply in the future, if such a system should be paper-based or electronic, and without any mention of the need for harmonisation of CDS between RFMOs, foremost of which, tuna-RFMOs, and how such harmonisation could be achieved.

In 2002, FAO COFI's Subcommittee on Fish Trade already assessed the feasibility and the practicability of harmonizing catch documentation used by RFBs in relation to trade; the harmonisation between RFBs, not within RFBs (!). The fact that CCAMLR's CDS covers two different species under one scheme, that the EU CDS covers many hundreds of species under one scheme,

[5] In this very context, and based on the technical recommendations regarding enhanced eBCD capabilities made by the expert in the same report, he concluded: "It is suggested to take first into consideration the improvements suggested in this report, in particular for all aspects pertaining to verifications and traceability, prior to undertake further steps in the design and the implementation of the e-BCD." Vergine, J.P. (2014) (highlights by the author)

[6] In 2014, a number of CPCs became engaged in testing/implementing the (electronic) eBCD system.

[7] See Annex 3 of the Report of the 12th Meeting of the Working Group on Integrated Monitoring Measures (IMM) (Madrid, Spain, 9-12 April 2018), providing the EU proposal to consider CDS expansion in ICCAT.

that CITES (a trade certification model very much akin to a CDS) covers thousands of species of plants and animals under one single scheme – including fisheries products, and the fact that ICCAT now covers both BFT and PWT under one scheme, does not provide sufficient solace to establish the fact that a single properly designed and encompassing electronic CDS system cannot only cover the needs of a single RFMO with regard to all of the species it would like to subject to it, but that a single scheme can and should cover the CDS needs of all RFMOs combined. The fact that tuna RFMOs must subject shared tuna species and stocks (Albacore, Yellowfin, Bigeye and Skipjack tunas) to a fully harmonized and fully compatible CDS in order to produce the desired results, is discussed in detail in FAO's TP596, providing a harmonized tuna-RFMO CMM for a CDS to be shared between t-RFMOs – as an annex to the same Technical Paper. It is that very template that IOTC Members have started to consider in early 2019 as the basis from which to discuss the potential development of its first CDS – with the cardinal proposal that development of such a CDS should occur in consultation with other t-RFMOs. The same template is appended in Annex I to this report.

Recommendation 1

In order to tap into the deep potential of an eCDS, there is a pressing need to develop a modern and enabling CMM for the ICCAT CDS, which allows for the further development and evolution of an electronic CDS system, providing an encompassing ruleset for the needs of the Bluefin tuna fisheries and their supply chain characteristics, catering at the same time for the needs for any of the existing other species and fisheries that may be subjected to the strictures of a CDS in the future, as well as catering for the option that the evolving system may be harmonized and be made compatible with other systems of the same nature that may be envisaged by other t-RFMOs in the future.

With regard to the latter, a narrow results-oriented Kobe-type engagement ought to be launched by ICCAT, targeting IATTC, IOTC, and WCPFC, in order to discuss and agree on how a harmonised and shared CDS system could be developed for the coverage of tuna and tuna-like species shared between several RFMOs. Such exchange ought to focus on the practicalities of developing and operating a single platform, where it would be hosted, and what functionalities it should strive to have. It is foreseen that within a harmonised CDS system, individual RFMOs retain full autonomy regarding which rules will be enforced automatically by the system, and which ones will be enforced through the intervention of competent authorities; likely embodying the most critical and fundamental condition in the absence of which a shared platform could not possibly be envisaged.

The new CMM should clearly identify and provide for those functions and capabilities, that a modern, electronic CDS system can be endowed with, including, but not limited to automated monitoring routines, alert functions, and enforcement of mass balance rules and other traceability elements – the latter typically requiring binding provisions to allow such functions to be activated. Other functions, such as reporting and querying functions, or the need to adapt to evolving market practices (*e.g.* the coming into existence of new product forms) should be broadly provided for, without the need to re-negotiate the CMM to add an item to an existing set of options to choose from.

The CMM in Annex I to this report provides a template that has been developed to this effect, providing a starting point.

3.2 eBCD design and operation

The BCD, and later the eBCD were developed with Bluefin tuna fisheries in mind – as the term "BCD" implies. In addition to this, it was designed at a point in time, when purse seining for live tuna, and transferring it to fattening farms, had developed into an industry that required enhanced oversight. This limited focus led to the designing of a tailor-made CDS that presents a number of limitations, weaknesses and gaps, which find many – but not all – of their origins in this limited focus. As noted in the previous section, ICATT's CDS would ideally have been developed from the point of view of covering any of its fisheries targeting tuna and tuna-like species – accommodating all possible supply chain transactions and permutations thereof – allowing the system to be applied to any of its tuna fisheries further down the road, without the need to undertaking further fundamental changes to the system that has been developed.

The following elements are important issues that should be taken heed of in any future review that the system is going to undergo.

3.2.1 The catch and re-export certificates under CMM 18-03 and CMM 18-12

The catch certificate, in its section 2 "Catch information", fails to provide a dedicated field for the product type (n.b. the instructions in Annex 3 posit that the product type should be indicated in brackets in the "total weight" box in the paper-based document in case it is different from RD). Also, only one line is provided. Fishing vessels may land the same species as different product types, and the option to provide several lines ought to be given. This is an important weakness of the system. On the electronic interface, product type is omitted altogether, and only a single input can be provided, meaning that a vessel can never offload more than a single product type.

CMM 18-03 and CMM 18-12 are silent on the issue of estimated and verified weights and fail to make provision on how migration occurs from the former to the latter. While this is regulated to some (but insufficient) extent for live transfers to farms (under CMM 17-07; see Chapter 4), the various CMMs are silent on the matter for transhipments and landings. In the absence of a solid mechanism to migrate from estimated weights to verified weights, there is a tendency for buyers to end up with less product on certificates than they have acquired in reality (typically following grading and weighing) – owing to the general tendency of fishers to underestimate catches. The absence of rules for transhipments and landings implies a lack of standards, resulting in implementation modalities that vary from country to country, with the obvious negative implications for quota accounting (to name but one), creating tensions between parties across the system. The formal counter-validation of verified weights by a CPC port State authority – once such weights have been formally established – is hence also not provided. With regards to transfers, weights are simply changed after counting, by amending certificates. Instead of adding the verified weights to a properly labelled section of the certificate, unspecified weights are replaced by the new set of unspecified weights. The BCD certificates do not yield any information as to whether one is looking at a preliminary, or an adjusted and finalised certificate, and the original information – through the fact of being replaced, rather than completed – is lost in the process, limiting the capacity for the exertion of monitoring, oversight and control functions.

The electronic catch certificate remains in the exact same form as its paper-based predecessor, engendering a number of inefficiencies and incongruences. The most important of these is the fact that two specific "trade" events remain part and parcel of the catch certificate. The function of the

catch certificate in generally accepted CDS theory is to certify the legality of the harvest aboard a fishing vessel, that is about to be offloaded – regardless of whether that be a transhipment, a transfer or a landing. The catch certificate's function ought to stop with the identification of the recipient of the offloaded catches. There can be three types of recipients, based on the type of unloading that occurs. For a transhipment, it is a reefer (location and master details provided), for a transfer it is a farm (with the intermediate procedure of transfer and towing vessels), and for a landing, it is a port and a first buyer of the products (with port and date of landing provided).

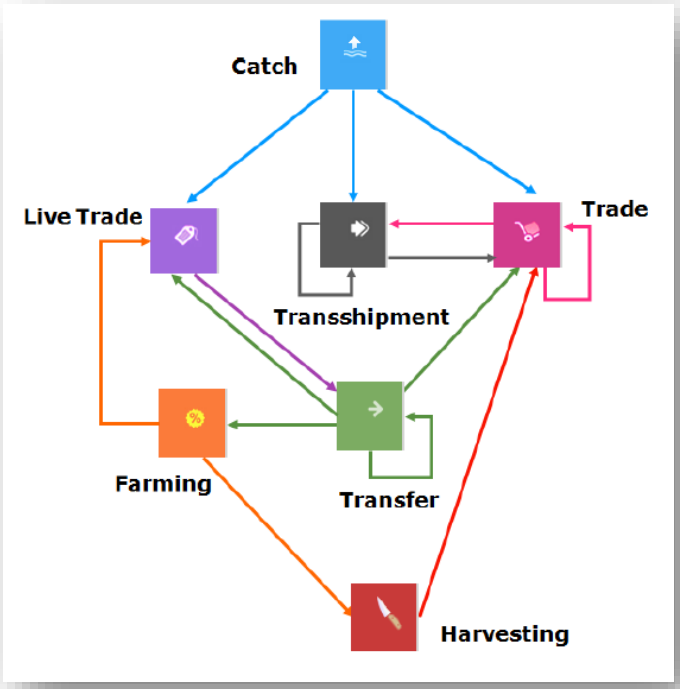

Figure 3. Showing illustration 11 of the 2015 eBCD "E-BFT Catch Manager" Handbook (page 19), showing the absence of a sequence identifying the landing and the first buyer. The "Trade" sequence refers to the identity of the exporter and the importer for international trade.

While the catch certificate makes ample provision for the transhipment and transfer scenarios, there is no specific part of the certificate that provides for landings in port, recording the name of the port of landing, the dates of the landing, and the name of the first buyer. While section 8 "trade" could be interpreted as the section in which to record the first buyer information – even if it is a national transaction (i.e. vessel landing catch in its port state and selling to a nationally registered company) – paragraph 5 a) of CMM 18-12 states that "recording of information on internal sales of Bluefin tuna in the eBCD (i.e. sales occurring within one […] CPC […]) is not required." While this provision clarifies the issue of not tracking the sales in the first country of landing, which used to be practiced under the paper-based system in its beginnings, it would definitely seem to suggest that the buyer of a landing, when buying in his/her territory from a national fishing vessel, does not need to be recorded.[8] This entails that the point of insertion into the land-based part of the supply chain, and the owner of the fish remains unknown up to the moment in time when a consignment is being prepared for exportation. With this being so, a copy of any BCD can be wielded as *prima facie*

[8] Note that figure 1 in CMM 10-11 "Basic flowchart of BCD sections with related actors" fails to identify a "landing" and/or a "buyer" following "catch", while "transhipment", "live trade" and "transfer" are duly provided for. The same applies to illustration 11 in the eBCD handbook (see figure 3) showing the sequence of sections, where landing and first sale are also absent.

evidence that products held in cold storage by any company has been sourced from a legally certified fishing trip. To challenge this, an inspector would have to launch an investigation into sales notes and transaction records, rules for which are not standardised, are based on national law, change from country to country, and whose implementation is uneven across ICCAT CPCs. The BCD fails in providing that evidence directly – as it should – and as all other existing multilateral CDS systems do.[9]

A related loophole and regulatory gap, compounding the former, relates to other trade transaction information elements, and how they flow back into the system and its central administration. Paragraph 5 i) of CMM 18-12 provides that "The trade section of an eBCD shall be validated prior to export. The buyer information in the trade section must be entered in the eBCD system as soon as available and prior to re-export." Paragraph 19 of CMM 18-03 provides that "Each CPC shall communicate a copy of all validated BCDs or BFTRCs, except in cases where paragraph 13(c) applies, within five working days following the date of validation, or without delay where the expected duration of the transportation should not take more than five working days, to the following: a) the competent authorities of the country where the bluefin tuna will be domestically traded, or transferred into a cage or imported, and b) the ICCAT Secretariat."

With regards to the former paragraph (para. 5 i) of CMM 18-12), the rule establishes that a buyer does not need to be identified for a trade to take place, and in case the exported product does not re-emerge in trade from the importing country, it will not have to be filled at all. This rule has the net effect of facilitating domestic trade of illegal product – by occulting the identity of the buyer in the importing territory. The definition of trade is that there is a seller and a buyer. There is no trade when either of the two entities are unknown or do not exist, and buyer info should be a non-negotiable must before a certificate (whether catch or trade) may be validated. With regards to the latter paragraph (para. 19 of CMM 18-03), developed for the paper-based system and – like all others – maintained to rule the electronic system, trades are not "closed". The exporting CPC notifies the importing CPC and the Secretariat of an exportation, but the importing CPC does not inform the Secretariat of the importation and the buyer, corroborating (or rebutting) the initial information. Hence, trades are left "open" and information is not verified.[10] In an electronic trade control system, such as a CDS, the trade can (and should) be "closed" within the system by the two commercial parties transacting before the dataset is submitted to the exporting CPC for validation. Failing to do so, the CDS does not make use of the potential of the electronic system at its disposal, and fails to provide (national) inspectors with the means to verify who has imported how much of what under which certificates, and to use the CDS as the first and comprehensive source of information to detect non-originating Bluefin tuna products entering their territory.

Another major critical gap in the catch certificate is the absence of a set of fields and related information on consignment details. While the catch certificate requires relevant transportation

[9] The eBCD interface requires the operator, at the time of raising the eBCD, to identify the exporter – instead of the buyer – confirming that the potential existence of a terrestrial supply chain (*e.g.* first buyer/trader – processor – exporter) is not provided for, and cannot be handled by the system.

[10] In CCSBT, operating a paper-based CDS, all trades must be confirmed by both exporting and importing parties, and are manually reconciled and closed by the Secretariat. All open transactions are pursued through exchanges of letters, and those that are not resolved are listed and brought to the attention of the compliance committee for appropriate action.

documents to be attached, the requirement is altogether absent in the re-export certificate (BFTRC). During the illegal trade scandal that sparked the preparation of this report, the absence of this set of fields is alleged to have facilitated the exportation of the same amount of tuna products following two separate routes (*e.g.* one by road and one by air), covered by the copies of the same paperwork recorded on the eBCD system. The only way to detect the fraud is in cases where national authorities run a parallel system that records eBCD numbers and their point of entry, with the system primed to detect inconsistencies (multiple parallel entries under the same certificate number). In this case, and with the possible exception of Spain, it is safe to assert that virtually no country is operating such a system. The eBCD fails in directly providing the minimum amount of information needed, in the form of recorded electronic data displayed on BCD printouts, and as opposed to all other existing multilateral and unilateral CDS systems, which all do ask for this information.

Finally, a simplified catch certificate, catering for the small-scale operators in the various other fisheries that are currently being discussed and envisaged, and that may come online in the future, is not given. While this may not apply much to Bluefin tuna fisheries in their current layout, it may in the future, and its identified need and development resonates with the idea that the eCDS needs to move beyond the narrow focus of BFT fisheries and the eBCD in their current forms, if expansion of the current system to new tuna and tuna-like fisheries should occur in the future. In addition to this, it was noted in Malta, that longline boat operators generally do not access the eBCD platform as individually identified users of the system, but have their BCDs issued by the CA (which accesses the system in their stead).[11] This embodies a *de facto* simplified circuit on its own terms, and underlines the need for a simplified mechanism at the present time, and the smaller scale capture fisheries as they currently exist.

In this final context, it should be noted that the idea to consider developing separate stand-alone – and potentially paper-based – CDS systems for other species under ICCAT mandate is irrational and wholly misguided.

Recommendation 2

The catch certificate should be trimmed back, removing trade-related sections from it, but keeping – and/or developing – transhipment, transfer and landing sections (named appropriately); all complete with first buyer information (at farms and ports of landings). Trade information proper should be relegated to a single-model trade certificate (currently named BFTRC), and cover all trade transactions, regardless of whether it is a first exportation, or a re-exportation. This document could be renamed "BTD" – for the sake of clarity and analogy with the BCD. The gaps and weaknesses identified in this section should all be remedied, including but not limited to the identification of the port of landing and the first buyer, rules and implementation modalities for estimated and verified weights, completeness of trade information before shipping, the "closing" of trades (via double confirmation by seller and buyer within the system) and the adding of consignment detail information in the form of recorded data (as opposed to annexed scans of documents).

[11] One particular fisher interviewed during the course of this work, and holding longliner Bluefin tuna quota, was unaware of the existence of an electronic eBCD application through which he can generate his certificates and submit for validation.

Models for a revised catch certificate, a trade certificate and a simplified catch certificate are appended as annexes I, II and III to Annex I, aligned with the model CMM provided in Annex I. These models address all of the gaps identified in this section and have been developed to operate within an eCDS.

3.2.2 System design issues

In November 2016, the eBCD technical working group (eBCD TWG) reported that the link between the catch certificate and the BFTRC was not solid, and that it was generally not possible to link original BCD numbers to re-exported products in cases that products from more than one BCD are being re-exported.[12] This leads to the understanding that the electronic interface has not been designed with a line-by-line connection, linking the imported BCD certificate number to the product to be exported. However, CMM 11-20 (in force at the time) provided for exactly such a link, and the eBCD application in late 2016 provided a loophole that was potentially available to launder non-originating BFT materials into certified supply streams by exploiting this weakness. In addition to this, the BFTRC model only provides for linking back into original BCDs – not a potential preceding BFTRC. This is a classic weakness of many current CDS systems, underestimating the potential number of sequential international trade transactions. The CDS, rather than trying to make a connection between a fishing vessel and a final importation throughout, it should be limited to ensuring that subsequent trades between pairs of certificates are hard-linked, and that the mass-balance between importation and (re-) exportation is enforced.[13] The electronic system is invariably capable of re-tracing any import back to the original certificate – or group of certificates. It is the linkages, and the impermeability between linked certificates that provides the traceability guarantees that no non-originating material can enter the supply chain, and these linkages are currently not entirely effective.

The same group reported in the same report that the handling of processing yields was not properly integrated within the system. Processing yields – applying to killed fish – are the counterpart of fattening rates in farming and are equally important. They are neither mentioned in CMM 18-03, nor in CMM 18-12, and this lack of guidance in the CMM engenders the absence of yield factor-related monitoring, alert and potential enforcement functions in the electronic system. Processing yields are a crucial element permitting to monitor weight loss through processing, and to detect and prevent laundering fraud. (see section 3.3.3 also)

It arises from the 2018 IMM report, that system reporting functions – to be used by private and public sector stakeholders alike to portions of datasets to which they should have access – have never been properly developed, making that the system is of little practical use other than recording BCD information in electronic format. 5 years after the system has gone live, an inspector wishing to run a query on how many BCDs have been imported by a given company, covering what volume of what type of product, over a given period of time, and how much of that has been re-exported under what form to where, is not possible. The same limitations apply for any query a company

[12] Doc. No. PWG-403 / 2016

[13] Enforcing mass balance between importation and exportation at the level of single certificates means that no more product can ever leave a territory under any specific certificate, than has entered it – taking into account product yields when processing has occurred, and possibly inward trade, in cases where it is formally recorded.

would like to run on the system, regarding its own BCD history. The only possible query a company can run is to look for a BCD.

If the CDS fails to establish catch certificates for all offloadings, the data it collects will not be useful for purposes other than driving/enforcing legal trade – while creating potential loopholes (!). If all offloadings are recorded and validated – including illegal and over quota catches, as the most "problematic" – then the data can serve as a near real-time quota and TAC monitoring tool. The system can then directly account for all catches, rather than relying on data submitted at the discretion of CPCs, the problems with which ICCAT has grappled in the past.

Finally, it appears from the reading of the user manuals that could be obtained, that alerts exist in the system, but that all alerts may be overridden by competent authorities, and that validations may be provided regardless thereof, even if trades are inconsistent (*e.g.* more product is traded, than available on a BCD). Unfortunately, this matter could not be assessed in more detail, owing to the difficulties in arranging for direct meetings with authorities, and that access to competent authority user manuals was denied. However, what appears to be clear, is that functions that should be logically embedded in the electronic system, providing automated enforcement of basic rules (*e.g.* a company cannot export more product under any given BCD, than has been acquired through same), are in fact not in place, undoing part of the greatest benefits an electronic system can and should provide. Instead of barring avenues for conflict of interest, collusion, corruption, and negotiation of rules that ought to be entirely non-negotiable and equally applicable to all stakeholders, an electronic system with few – if any – superior enforcement capabilities has been rolled out.

Recommendation 3

The BCD system, as originally designed, and still largely in place to date, is in need of a fundamental review. The issues discussed in this section need addressing, in order to ensure that traceability across the document system and the underlying data flow is tight and guaranteed throughout – regardless of supply chain length and complexity – and that all data are collected and recorded centrally. A function to monitor, assess and raise alerts in cases of processing yield anomalies ought to be designed and implemented as part of the package, while basic rules and their compliance should be hardwired into non-negotiable electronic enforcement routines.

These wider design issues need to take into account the gaps identified in the previous section on certificate content, layout and linkages, as well as those addressed in the following sections (foremost of which those on inward trade, tagging and completeness of data recording), and become reflected in a completely revised and updated CMM. In doing so, the uses of CDS data, beyond the purposes of ensuring illegal fish is denied market access, and of which the potential to use the CDS as a quota monitoring and management tool is one of the most critical considerations, must be studied.

3.2.3 Inward trade

Inward, internal, domestic, or national trade, which does not engender an international trade transaction (exportation/importation), is not recorded in the system today. This is provided in CMM 18-12, para. 5, a), providing that "Following the recording and validation of catch and first trade in the eBCD system in accordance with part II of Recommendation 18-13, the recording of information

on internal sales of bluefin tuna in the eBCD (i.e. sales occurring within one Contracting Party or Cooperating non-Contracting Party, Entity or Fishing Entity (CPC) or, in the case of the European Union, within one of its Member States) is not required." (highlight by the author). This is the same in all existing CDS, and invariably gives rise to the same challenge.

In the ICCAT CDS, this issue is compounded by two further matters: a) the landing and the first buyer are not identified, hence the starting point in the land-based supply chain is unknown, b) sales from farms into the national market need not be covered, as the transfer to the farm is recorded under part II of CMM 11-20, and hence all subsequent internal trades need not be recorded.

For landings, the net effect of this is, that the existence of some stock of BFT with any given exporter under the eBCD system becomes only known at the point in time when somebody who acquired fish from a landing – or a trader – applies for an exportation under the scheme. How much stock that company has acquired from which eBCDs, and how much of that has been sold into the domestic market already, is unknown.[14]

For farms, the non-accounting of inward trade is equally, or even more critical, since failure to account for fish entering the national market entirely forfeit the possibility to account – at the level of the eBCD – for what is leaving the farm, and to reconcile those numbers with received and recorded transfers into the farm. The net effect of this is that any product sold into the domestic market – and not accounted for under the eBCD system – remains "available" on the books of the farm (and within the eBCD system) for exportation.

The absence of inward (or national) trade of legally acquired Bluefin tuna engenders a situation where anybody is entitled to be in possession of Bluefin tuna in the absence of documents establishing its legality. In the case of smuggled product entering the territory – which was the case in Spain also – detection of illegal entries on the basis of documents establishing legality is largely impaired, very difficult or impossible to achieve.

The doing away with the inward trade function originally part of the paper-based BCD in the first country, was discussed by Vergine (2014), predicting that it would create opportunities for fraud, that would actually be supported and magnified by the operation of an e-system allowing for such blind spots, as follows: "The on-going discussions on the e-BCD are mainly of technical nature and there are some considerations for excluding domestically trade BFT from its scope […]. The benefits to be expected from the e-BCD would be thus seriously undermined if the shortcomings pointed out in this report […] and if its scope would be limited. Due to the normal impact of the automatic treatment and transfer of data inherent to any declaration scheme based upon e-technology, a further degradation of the current situation could even be anticipated. It is also important to avoid any limitation of the scope of implementation, which could easily generate circumvention means."

It is critical to understand the interplay between CDS, trade and consumer end-markets. CDS were originally designed – and remain largely unaltered – to cover products that are traded internationally, ensuring that illegal products cannot gain access to such markets, as a means to

[14] Note that even if the first buyer was duly recorded under the e-scheme, and the acquired stock was known, the fact that domestic sales are not recorded will leave the same buyer with excess (or "ghost") fish on the books, opening the door for the laundry of non-originating fish into export markets – or indeed, into internal markets.

combat IUU fishing in places generally far removed from the markets where such prized products are ultimately consumed. For sashimi-grade Bluefin tuna, produced in Europe, Australia and Mexico (*inter alia*), and of which the lion's share was (and continues to be) traded to Japan, and falling under both ICCAT's and CCSBT's CDS, and with the end-market applying the strictures of the CDS with resolve, the systems worked very well, and are thought to have managed to substantially subdue the often government condoned quota-overfishing to which those fisheries were prone.

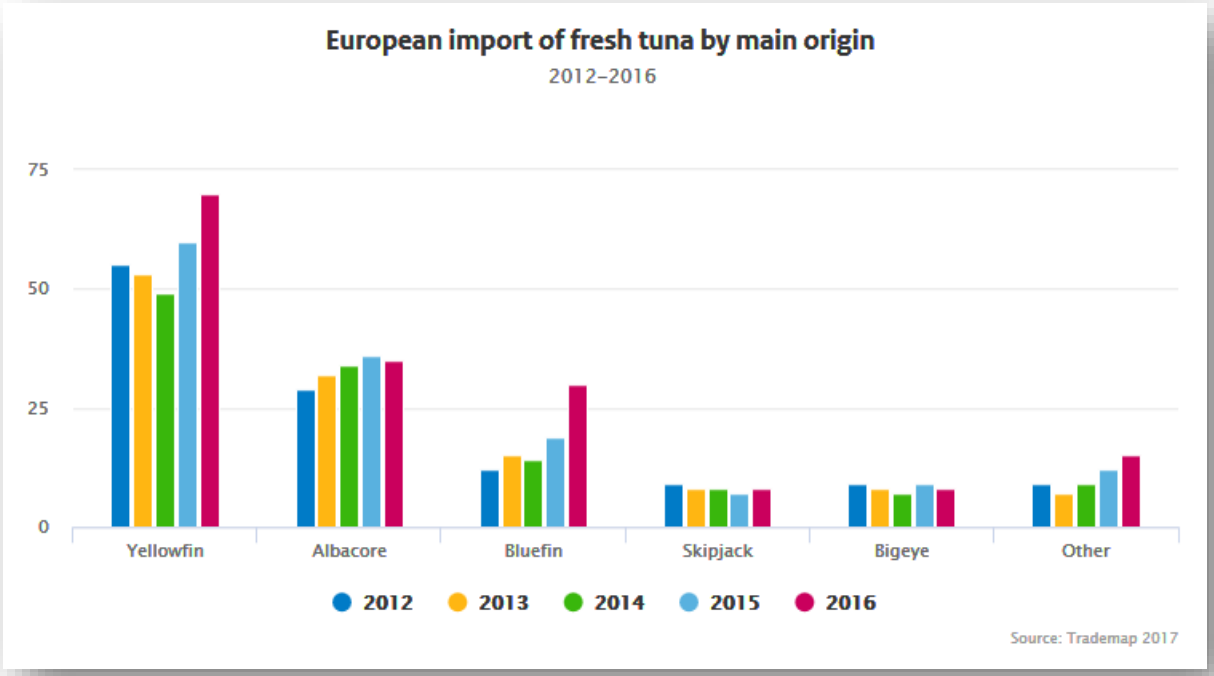

Figure 4. Showing figure 1 of CBI's guidance document "Exporting Fresh Tuna to Europe", showing a 150% increase of fresh Bluefin tuna imports into the EU Member States between 2012 and 2016, rising from Euro 12 million to Euro 30 million.

However, markets are changing, and today, Europe is rising as a consumer of Bluefin tuna, with Spain, Italy and France being the three markets that are developing most rapidly. Figure 4 shows that the European market for fresh Bluefin tuna is the fastest developing of all European fresh tuna markets, having more than doubled between 2012 and 2016.[15] The same source reports that "Intra-European imports dominate the supply of fresh tuna to Europe (80%), followed by developing countries (18%) and the rest of the world (2%). […] In 2016, bluefin tuna dominated exports (€161 million, 68% share of total export of fresh tuna). […] Japan is the foremost destination (€130 million in 2016), as this country receives the lion's share of bluefin tuna exported by Europe.[16] Spain is the second export destination (€27 million), followed at some distance by Italy and France (€16 million and €12 million respectively), and the United States (€11 million)." (CBI, 2018)

[15] It is also noted that "despite its minor role in terms of volumes produced, the value of [farmed] bluefin tuna has been rising since 2010 at a remarkable average annual growth rate of 21%." (EUMOFA, 2018)
[16] This equates to 81% of all exports. Japan was absorbing >90% of all exports a decade earlier. This illustrates a still dominant Japanese market, gradually diminishing in importance, with the concomitant rise of the European market.

The growing European export markets are also engaged – to varying degrees – in the process of harvesting and farming Bluefin tuna in their capacities as flag and coastal States. 80% of the fresh tuna – all species combined – they import originates from within Europe, and it is likely that the share of fresh Bluefin tuna imports originating from within Europe substantially exceeds that value. This process challenges the foundations and the principles upon which a CDS is constructed. While Bluefin tuna continues to be produced for – and to be traded to – Japan, the majority of Bluefin tuna consumed in Europe originates from intra-European trade, and in many instances from within the same EU Member State producing it. This is true for France, Italy and Spain, in increasing order of importance. Inward trade is thus developing into a main trade route, and failure to subject it to the same CDS strictures as international trade will spell the end of the CDS' effectiveness, and its capability to keep illegal product out of the legally certified supply chain.

Recommendation 4

If the eBCD – in the face of changing market dynamics – is to remain effective and relevant as a means to combat IUU fishing, inward trade will have to be covered. And this should not be limited to the country in which a first transaction (offloading) occurs, but to all countries along the supply chain. Necessary tweaks to the electronic system as it currently exists will be limited, as trade transactions are already set up as a module for international transactions, and can easily be adapted to cover inward trade also.

The recording and the validation of inward trade transactions should be limited to a set number of actors, which include fishing vessel representatives, farm representatives, traders, processors and wholesalers. Retailers (including supermarkets, fish mongers and restaurants) should not be made to record purchase transactions on the electronic system, but a rule should establish that the fishing vessel representatives, farm representatives, traders, processors and wholesalers are obliged to provide information (in the form of BCD/BFTRC copies) to buyers, indicating from which certificates their purchases originate, and to record these final sales transactions unilaterally on the eBCD platform – giving rise to a final and "non-closed" transaction in the system. Products thus covered can only be sold to the end-consumer without the formal recording (on the eBCD platform) of the final sale. This allows the system to achieve deep market penetration, undermining and cutting out most of the avenues exploited in the recent illegal Bluefin tuna trade scandal.

3.2.4 Sanctions

The issue of sanctions is critical in any MCS program, and the set of rules that lays down such program. In CDS CMMs, it is not uncommon that the closest mention of a sanction is a rule that establishes that a certificate may not be validated by the competent authority under a given circumstance – or set of circumstances.

Flag-state and port-state CPC authorities may be unclear as to the enforcement measures applicable in a CDS for infractions such as false claims, submission of falsified documents and detected/ established illegal fishing operations – of which types generally rank from minor infringements to criminal infractions. Some of the questions that arise include, but are not limited to the following[17]:

i. If IUU fishing is detected, should the CPC refuse to validate a submitted CDS certificate?

[17] Adapted from FAO TP596, Chapter 10.

ii. If IUU fishing is detected, sanctions are imposed, and imposed sanctions are served by the offender, can the products be considered non-IUU and the CDS certificate be validated?
iii. If a requested CDS certificate is not validated, must the products be destroyed, or may they be sold into the domestic market?
iv. Can a CPC decide to disregard instances of fraud and validate related CDS certificates?
v. What sanctioning powers ought to accrue to the RFMO in cases where non-compliant CPCs fail to apply the CDS and allow IUU products to flow into/through their markets?
vi. What is the minimum level of sanctions for particular types of infractions?
vii. Is refusal to validate a submitted CDS certificate a sufficient (or appropriate) sanction under given circumstances?

These questions must be answered within the context of CDS operations, and then become integrated into the design of the CDS – and in its CMM – and the electronic interface must be primed to competently deal with all of the mechanisms that such design engenders. In addition to this, oversight functions and sanctions must be implemented transparently to ensure that the same type of infringements incur similar sanctions across CPCs participating in the scheme. Failure to do so will erode the will of CPCs to apply the strictures of the system to their operators with resolve.

Very little substance on sanctions is part and parcel of both key resolutions establishing ICCATs' eBCD – *i.e.* CMMs 18-13 and 18-12. The first provision that may be laid out as addressing sanctions – but without mentioning them – appears under para. 13 b), where it says: "The CPCs shall validate the BCD for all bluefin tuna products only when all the information contained in the BCD has been established to be accurate as a result of the verification of the consignment, […] and when those products comply with other relevant ICCAT provisions of the conservation and management measures." This provision implies that if the CA finds that the products were obtained in contravention to "relevant ICCAT CMM provisions", then there should be no validation. This answers the first question in the list above, but fails to provide any more guidance – critically necessary – in order to ensure that minimum and standardised sanctioning terms can be applied by CPCs in a fair and transparent manner.

In the case of over quota catches, the same paragraph provides that BCDs shall only be validated "when the accumulated validated amounts are within their quotas or catch limits of each management year, including, where appropriate, individual quotas allocated to catching vessels or traps." However, the CMM is silent on what sanction awaits the operator, or what fate awaits the products that have been landed over quota, and that shall not be validated/certified. While it is intuitive that they cannot enter international trade – for lack of CPC validation, and hence lack of certificate validity – the option of domestic trade is not excluded *expressis verbis*, implying that the sanction to be applied is limited to the non-validation of the certificate.

The new provision in CMM 18-13 (para. 13 b))[18] fails to provide clearer guidance on the overall question of sanctions and catch fate. Instead of linking it to first principles, the matter is linked to

[18] (*existing/old part*)
b) The CPCs shall validate the BCD for all bluefin tuna products only when all the information contained in the BCD has been established to be accurate as a result of the verification of the consignment, and only when the accumulated validated amounts are within their quotas or catch limits of each management year, including,

CPCs that operate a "no discards" policy. It is also internally contradictory, as it first provides for the confiscation of the value of the fish, and in the second clause, it refers to the confiscated product. While this is the only clear and direct reference to a sanction under both CMMs, it is incoherent from a law enforcement point of view, since once the value has been confiscated, there is no reason why the fish should not enter trade.[19] The provision also fails to establish which value should be confiscated, the value of the product in the targeted export market(s), or the value of the product in the domestic market, bearing in mind that in many countries, those values will be vastly different. Also, the validation of the eBCD is then foreseen, while trade shall not be allowed. This is wholly inconsistent with the fundamental system rules themselves, and the wording of the provision implies that CPCs must develop a parallel national system of BCD data sets and communications in order to ensure that this rule may not be flouted. In a solid electronic system, a function must be provided that allows for the over-quota landing to be recorded and "validated" as a BCD in the system, and that related products may then not be traded on the basis of the competent authority having access to a system function that allows it to indefinitely "block" the related BCD in the system.[20]

Finally, while a CPC operating a no-discards policy, and detecting an over-quota landing, will confiscate the value, validate the BCD, and then prevent a trade from occurring, a CPC not operating a "no discards" policy will simply not validate the BCD. The discrimination against fraudsters from one set of CPCs against those of the other set of CPCs could not be starker, and the question arises whether this type of penalty creates the deterrent effect that is needed to discourage similar behaviour in the future.

Regarding the certification of "problematic" catches, CCAMLR solves the sum of these issues through the issuance of a "specially validated DCD", or SVDCD. It provides that detected infringements must be sanctioned, that sanctions must be served, and that thereafter the products may be validated through the issuance of a certificate that bears a mark of distinction. Market States are then in a position to decide whether they accept or refuse the importation of products under such certificates – knowing that sanctions for underlying infringements have already been administered and served. This results in the effective sanctioning of offenders, the non-destruction of harvested (and killed) fisheries products, and the recording of a maximum of offloading data within the eCDS.

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where appropriate, individual quotas allocated to catching vessels or traps, and when those products comply with other relevant ICCAT provisions of the conservation and management measures.
(*new part added under CMM18-03*)
The requirement that CPCs shall only validate BCDs when the accumulated validated amounts are within their quotas or catch limits of each management year, does not apply to CPCs whose domestic legislation requires that all dead or dying fish be landed, provided that the value of the catch is subject to confiscation in order to prevent the fishermen from drawing any commercial profit from such fish. The CPC shall take necessary measures to prevent the confiscated fish from being exported to other CPCs.

[19] This provision is also decidedly discriminatory, assuming that the value of the catch is determined by a CPC on the basis of international market prices. When the product is landed by an operator into a territory with a strong internal market (e.g. Japan, Spain or Italy), the confiscated value can be recovered by selling the product into the domestic market, and the net outcome is close to that of a zero-sum operation, plus the costs relating to a fishing trip with diminished financial returns. When the product is landed into a territory with a weak or non-existing internal market, and the value of the confiscation cannot be recovered through a series of domestic sales, then the sanction is substantially more punitive.

[20] The wording of the provision suggests that a document blocking function is not part of the current eBCD system, while the need for such a function is inherent to the provision as formulated.

Recommendation 5

ICCAT should provide answers to the critical questions relating to minimum sanctioning standards applicable to the diverse range of infringements that may occur, and how these should be handled at the level of the eBCD. Once defined, the system – in need of revision – should be primed to take heed of this guidance and provide routines for their application. Discriminatory sanctioning provisions, and provisions running afoul of basic CDS rules and logic – as identified in this assessment – should be eliminated.

The option of adopting a CCAMLR-style specially validated certificate for products that do present issues related to IUU fishing and/or over-quota catches – whether intentional or accidental – and to be validated in cases where sanctions have been applied and served, should be explored.

3.2.5 Burden of use

As with all new systems, users may complain of the burden of use and compliance that a new control platform creates. This burden is often felt equally at the level of public administrations, as it is felt at the level of private sector companies. One of the ways in which burden of use can be counter-balanced in intelligent system designs, is by developing user functions that assist the user in performing previously existing tasks better and/or faster, or add information, routines and functions that were not previously available to the user, and that present a net benefit – provided free of charge with the new system.

The assessment in this report is limited to the functions available to the private sector user, owing to the fact that no government agency, nor the ICCAT Secretariat, were willing to share the eBCD competent authority user manual with the expert. User manuals are located on the password protected portion of the eBCD web pages, ensuring that nobody reads manuals out of plain curiosity.[21]

The user manual reveals that the eBCD interface does not contain a single query, report or other function, that would allow the private sector user to obtain any benefit whatsoever from interacting with the platform, and the data he/she is feeding it.[22] The bare minimum would be to enable the user to run queries and to collect relevant summary statistics on its past activities; functions companies may not have developed as part of their in-house systems. Especially smaller companies, generally grappling more with the burden embodied by these systems, would be likely to draw some benefit from such functions.

The other point is that especially operators of catcher vessels are required to submit the same sets of catch data several times through different routines to their competent authority and/or ICCAT. To operators there is a very clear need to streamline procedures, and to do away with overlapping and non-harmonised data submission routines applied in the broad domain of catch monitoring and data collection.

[21] The eBCD user manuals for private sector operators were downloaded and made available to the author by a Spanish private sector company.

[22] Note point 8 of the key attributes and functions that electronic systems should be endowed with, provided in the FAO Voluntary Guidelines for CDS. (See section 2.2)

Tying in with the previous point, companies report that apart from feeding in-house IT systems data on inbound and outbound consignments of Bluefin tuna and their certificates, the same (or similar) data have then to be recorded again in the eBCD system, owing to the fact that company IT systems cannot directly interface with the eBCD. This engenders risks for copying mistakes to occur, and extends the time needed to digitise and save all data across all systems.

Recommendation 6

ICCAT should revise BFT catch data submission routines provided for across the various CMMs containing such routines, and feeding the diverse functions of the management system (e.g. Science and MCS). Data collection and submission ought to be streamlined and harmonised, ensuring that overlaps and duplication are eliminated, and that the burden of compliance relating to data submission routines for private sector operators in this domain is reduced to a minimum – without loss of data resolution.

ICCAT should also consider developing a bridging application that can be "trained" by company IT engineers to harvest specific consignment data from the company's IT system, to relay harvested data across into the eBCD certificate module, so that certificates may be populated to a large degree without the need to re-copy and re-construct the entire dataset on the currently un-linked eBCD platform through entirely separate work flows.

3.3 Exceptions and derogations

Exceptions and derogations are a hallmark of CDS systems, and are by no means limited to ICCAT's eBCD system. Exceptions and derogations undermine standardisation, have the tendency to be discriminatory and to weaken the system, and to introduce loopholes that can be exploited for unlawful outcomes.

3.3.1 Tagging

The first and most serious exception in the system pertains to the tagging of dead fish, under the scenario of which the need for a validated BCD (or eBCD) is waived. Instead of tags being devised as a complementary, additional and mandatory means to physically identify legally caught fish, in parallel to the submission and validation of the related and mandatory certificates, tags were devised as an optional substitute to duly validated certificates. Therefore, instead of strengthening the BCD system, tagging actually undermines it, complicating and seriously weakening the traceability system of which it is a part. BFT products – such as loins – will have lost their physical tags following (pre-) processing and may proceed along international supply chains without tags and without validated BCDs. Conceiving a transnational traceability system providing solid guarantees on the basis of such fundaments is impossible; not least because of the human dimension and the training needs of inspectors across international supply chains needing to be able to understand unduly and highly complex labelling and certification rules for products by-passing the standard set of coherent documentation, certification and labelling rules, and that trade in comparatively (very) low volumes.

While it is conceivable that a physical validation under the paper-based system was understood as an additional burden, compounding the burden of submitting a list of tags to be signed off on by a competent authority, such logic cannot and should not apply under an electronic system, where the

act of validation should logically apply to both the list of tags and the related eBCD, submitted electronically at the same time.[23] Under the paper-based system, the net effect of this was that a large part of BCD's were never validated, and never centrally recorded by ICCAT.[24]

The other important point is that tags should be an "either-or" matter. In CCSBT, all SBT must be tagged for monitoring and control purposes. And catch certificates must be issued and validated for all catches also. Tagging is complimentary to certification, and mandatory. It serves the system by strengthening guarantees of legal origin and has no negative impact on the raising and validation of certificates. Since Bluefin tuna carcasses have a tendency to move along international supply chains in head-on format – meaning that tags attached to gill plates will be present – the option of tagging as an additional and complimentary measure to certification is a solid option. However, the decision to do so should not be taken lightly, and the added benefits to monitoring and enforcement should be weighed against the added burden of compliance and administration – and last but not least – the product quality risks and implications this may harbour in warmer latitudes.[25]

Recommendation 7

The current, optional tagging system is maintained in its original regulatory form, and is disruptive to the traceability system put in place through the CDS. In order to become supportive and complimentary in nature, strengthening the eBCD, ICCAT ought to study and decide whether tags should become mandatory, and be applied to all BFT catches, or whether they should be eliminated altogether. Tagging for the purpose of compliance monitoring should be an "either/or" proposal. And whatever the option to be finally retained, tags should never be used in substitution to duly submitted, registered and validated eBCD data and certificates.

3.3.2 Derogations – and waving the need for validation

The latest BFT illegal trade scandal was – as far as is known at the time of writing – an affair limited to EU operators and EU markets. While it is conceivable that primary sources of unreported and thus illegal BFT may not have been limited to vessels flagged to Member States of the European Union, it is clear that the farms and markets involved in the illegal trade all were. And the staggering amounts of illegal trade that were uncovered, and in relation to which it will always remain unclear what portion of the intra-EU (and beyond) illegal trade these represent, clearly establish that if there is a need to strengthen monitoring and control measures at the level of the ICCAT rules, these should pay particular attention to the EU situation, the growing nature of its Bluefin tuna markets, and the obvious and growing needs to ensure that rules in place are at least as stringent and applied as tightly with regards to EU operators, as they are with regards to all others.

What we do find in the latest revision of CMM 11-20 (*i.e.* CMM 18-13), and CMM 18-12 is rather the opposite of what is suggested above. The revision of para. 13. b) of CMM 18-13, providing for a

[23] This is one of the good examples to illustrate that moving from a paper-based certification system to an electronic system without an adjustment, and an upgrading of the underlying rules, is a fallacy.
[24] FAO TP596 reports the effect of tagging in substitution of validating BCDs as follows: "In 2013, BCD copies submitted to the ICCAT Secretariat covered only 66 percent of the total harvest reported by the contracting parties: hence a third of the catch bypassed the CDS reporting and traceability system."
[25] In tuna fisheries practiced in warm weather, the fish have to clear the deck into the refrigerated hold as fast as possible, to ensure that quality is maintained. Tagging and measuring of individual fish can double time on deck, with fish exposed to heat. Tagging can thus bear a direct impact on product quality and value.

validation of over-quota BCDs for countries operating a no discards policy – a policy being adopted by the European Union and being applied to a broad set of fisheries across its Member States – talks to the EU's particular situation, albeit not naming it, and making a mess of the earlier single provision, as discussed under section 3.2.4. Para. 5. b) of CMM 18-12, on the other hand, directly exempts EU Member States to validate BCDs for "fillets" and "other" product forms – the latter covering the all-important and currently non-specified product types of "loins" and "cans". These derogations fly in the face, not only of the latest developments in illegal intra-EU trade, and the obvious need for the most stringent controls, but also of conventional CDS wisdom. Why would a selection of critical product forms be exempted from validation – waving CA oversight for such products – and be applied to a set of countries that currently (re-) embodies the greatest source of IUU threats?

It can be argued that EU derogations also embody a *de facto* discrimination against all other CPCs, and validation requirements should never be waived for a select club of CPCs that has been able to argue that it needs a different treatment. Such treatment invariably undermines system strength and performance.

However, a well-designed eCDS should provide the option to record, and to allow transactions between two commercial parties without the intervention of, and the formal validation of a competent authority, under specific circumstances, and if equally applied to all stakeholders. Those circumstances may be summarised in the form of a system-bound mechanism that guarantees consistency of trades and respect of rules, based on electronic automated checks and enforcement routines, and peer-to-peer confirmation (and enforcement) of transactions.

Such mechanisms can substantially reduce the burden of implementation on administrations, while greatly speeding up transactions for private sector operators. Certificates should always be validated by all CPCs, unless:

- automated system routines between buyer and seller are developed, giving rise to system-monitored and enforced transactions which are in compliance with traceability and mass balance rules, and which consist of "closed" trades, confirmed by both parties;
- Under the above scenario, the option of a non-objection routine replaces formal CA validation – but this requires the putting in place of a special routine that alerts CAs of transactions that show potential issues (*e.g.* exceedingly generous processing yields), automatically cancelling the default "validation waiver", requiring direct supervision and validation instead.

Recommendation 8

eBCD derogations for select parties (or groups thereof), such as validation derogations, undermining the integrity of the eBCD as a whole, and creating discriminatory precedents, should be eliminated. All functions serving the purpose of monitoring and enforcement of rules should equally apply to all parties, always. In the light of the continued high degrees of illegal trade detected within EU markets, as a compounding factor, all EU derogations should be eliminated.

The option to waive validation requirements for internal trades – or given types of international trades – on the basis of a system of "closed" trades, where both private sector parties involved in

the trade record and validate a trade that is consistent with all system-bound and enforced rules guaranteeing mass-balance, traceability and other potential factors, should be studied by ICCAT as part and parcel of an overall system review. Such a routine can substantially reduce burden of compliance across the board, while maintaining similar or improved degrees of compliance monitoring and enforcement.

3.3.3 Product types

Tuna in cans, or in the form of loins, is not expressly exempted from certification under CMM 18-13, nor under CMM 18-12, and clearly should not be, as it represents a major product form into which Bluefin tuna meat – the primary Bluefin tuna commodity of interest – is processed, and put to market. This is not only true for Bluefin tuna, but is also true, and to a much more important degree, for other species.

In 2016, the eBCD-TWG poses the following question: "Specifically, the TWG needs direction from the Commission on the following issues: (a) Should canned bluefin tuna be included in the eBCD system;"? The question that arises is how tuna cans could possibly not have been included in the eBCD system, and this likely owes to the fact that the development of the interface was guided in the strictest of terms, not only by the limited number of enabling provisions of CMM 11-20, but also by the content – and even the layout – of the actual paper certificates contained in annex. The question of loins is not asked by the same group, even though they are just as important.

While an electronic system can contain a menu of any number of relevant product forms, which can easily be updated on-the-go, as new product forms find commercial adoption, cans and loins were not included – it is assumed – because they were "missing" on the BCD in its original iteration. Cans and loins thus have to be recorded under the generic product form "others" (OT), forfeiting the potential for yield factor monitoring, and enhanced potential for the detection of laundering fraud.

It is also noted that the limited number of product forms (and acronyms) included in the BCD forms of CMM 18-03 – seven in total; F/FR/RD/GG/DR/FL/OT – are not defined anywhere, and the CMM does not refer to a source where such definitions could be looked up. There is diversity in the acronyms used in different places for same product types – including between tuna RFMOs – and such definitions are necessary in order to avoid confusion. The final annex of FAO TP596 provides a list of 34 product forms – including "OT" – that are common currency in global tuna markets today. The list currently in use as part of ICCAT's eBCD falls short of the reality and needs of global tuna markets and weakens the scheme by undermining the potential development of more solid routines to monitor processing yields.

Recommendation 9

Product forms, their acronyms and their definitions should be provided in the CMM laying down the eBCD. The CMM ought to contain a mechanism by which this list of product forms may be updated and/or expanded, by simple decision of the Assembly, and without the need to amending the CMM proper.

4. Live trade and control provisions of CMM 17-07 and CMM 06-07

In the recent BFT illegal trade scandal, in which several fatting farms were found to be involved as the alleged source of unaccounted for fish, the critical question arising was whether eBCD provisions present gaps, including those relating to live trade, whether and how such gaps might have been exploited, and whether remedial action is required at this level.

Unsurprisingly, it was not possible in the framework of this assessment to establish the source of the unaccounted-for fish into the farms accused of malpractice. What seems to be clear and established, however, is that unreported and unaccounted for fish was received (transferred) into farms, was at least partially fattened, and was later traded from Maltese farms into the Spanish market, via an encompassing set of different routes, including air, road and sea transport.

4.1 Summary of applicable rules

CMM 17-07 entitled "Recommendation by ICCAT Amending the Recommendation 14-04 on Bluefin Tuna in the Eastern Atlantic and Mediterranean" contains, *inter alia*, the control rules applicable to E-BFT fisheries, covering observer duties, transhipment, transfers and live trade amongst several other aspects.

The system provides for the harvesting and transfer of fish between licensed operators aboard catcher vessels, tugboats, and farms that are authorised to participate in these activities. The system provides for oversight mechanisms, which include national and regional observers, and an ICCAT Scheme of Joint International Inspection. Transfers of fish from purse seines into tow cages, and from tow cages into farm cages must be recorded through the prescribed use of stereoscopic cameras and a detailed sampling system, giving rise to good estimates of how many fish and what overall weight has been received into transfer – and later into farm cages. At all points of these operations, data must be submitted to competent authorities, and authorisations to transfer, tow and cage are given in near real-time – implying that there is tight oversight being exerted, sometimes earning the E-BFT fishery the title of the "most heavily regulated fishery in the world".

CMM 06-07 entitled "Recommendation by ICCAT on Bluefin Tuna Farming" – 13 years old at the time of writing – predates the BCD, and much of the control rules put in place by CMM 17-07 and its preceding iterations. Much of the provisions contained in this recommendation are mirrored in CMM 18-12 in more detailed, stringent, overlapping or contradictory terms. Para. 1. a) mandates the equipping of tugs and towing vessels with VMS, and so does para. 88 of CMM 17-07 – with greater detail – and referring to the related paragraph in CMM 06-07. Para. 2. c) lays down a sampling protocol to be applied at the time of harvesting (!), to establish estimates for the "composition of the fish caught". CMM 17-07, without making reference to this provision, establishes in its Annex 9 a detailed sampling protocol based on stereoscopic cameras at the time of caging, which is infinitely more detailed, and susceptible of generating better, and timelier data. The two measures continue to remain in force in parallel, overlap at least in part, and the former has not yet been adjusted (or eliminated) in light of the latter. CMM 18-14 entitled "Recommendation by ICCAT Amending Four

Recommendations and One Resolution" provides a number of formal amendments of CMM 06-07, *inter alia*, which substantiate the findings of this part of the assessment – *i.e.* the CMM in its original form has ceased to be fully applicable and coherent many years ago, and a harmonisation and consolidation of ICCAT regulatory substance in this domain is required.

Recommendation 10

At the level of control functions covering fishing, transfers, caging, farming and the estimation of fish caged – consolidation of texts is needed in order to ensure compatibility and consistency or rule making, to eliminate (mandatory) redundant practices and routines, and to ensure that individual provisions may be read and understood by industry and CAs alike, and that ICCAT's regulatory substance is open, transparent and easily assimilated by all parties – public and private. Wider control functions, such as those provided in CMMs 17-07 CMM 06-07 (and replacements and deletions enacted through CMM 18-14) should be consolidated into a single text.

4.2 Loopholes and their remedies

It has been established in the previous chapter that substantial gaps and weaknesses diminish the effectiveness of ICCAT's eCDS. The weaknesses that are assessed at the level of CMM 17-07 relate to the control part of the CMM (part IV), and specifically – albeit not exclusively – to gaps and weaknesses that could facilitate the underreporting of catches, and the stocking of unreported live fish at farms. Some of these oversight mechanisms are not directly related to eBCD implementation, but bear downstream impacts. Pathways along which underreporting can occur, split into two separate branches. These are; a) pathways that exploit weaknesses within the ruleset, putting unreported fish into farms through regular channels, and; b) pathways circumventing the regulated routes for stocking farms altogether, and for which control measures beyond those currently in place need to be developed. From discussions held in Malta during the course of this work, it emerged that both pathways were likely being exploited by illegal operators, and both avenues need to be addressed with equal resolve.

Key weaknesses within CMM 17-07, and related recommendations, are covered in sections 4.2.1 and 4.2.2 below, while key gaps and potential solutions are covered in sections 4.2.3 and 4.2.4.

4.2.1 Stereoscopic camera rules

The rules on stereoscopic camera use, and the standardisation of how cameras must be deployed, how they must be calibrated, how data sampling must be done, etc. – has evolved substantially in recent years, and fills a void that used to give rise to a plethora of problems. Standardisation is meant to ensure that this tool is deployed and implemented in the same manner across all transfer and caging operations, creating a level playing field for establishing the best estimate for the number of fish and the volume of fish caged at the farm – and concomitantly – of fish to be deducted from a fishing vessel's quota.

A number of weaknesses remain in this system. The first one relates to the rules on what must be recorded on film. These rules are laid down in Annex 8 entitled "Minimum standards for video recording procedures" of CMM 17-07. This Annex is split into two parts, the first part laying down rules for transfers, and the second one for caging operations. Paragraph iv) of each part determines that "at the beginning and/or the end of each video, the ICCAT transfer/caging authorisation number

shall be displayed", which provides guarantees as to the fact that the footage was indeed shot, following the allocation of such authorisation number. Paragraph vi) of each part determines that "Before the start of the transfer, the video shall include the opening and closing of the net/door and whether the receiving and donor cages already contain bluefin tuna." This allows to establish the (due!) emptiness of the receiver cage during transfers, and the emptiness of the farm cage during caging. What the rules fail to provide for, is what must be filmed at the end of the transfer – and which should logically resonate with paragraph vi). If the empty state of the donor net is not asserted at the end of the transfer through video footage, there is nothing preventing the crew transferring fish from one cage to the other from stopping recording half-way through the transfer, and submitting that footage to estimate the totality of tuna transferred. Given the depths at which tuna may gather during such transfers, and other complicating factors, such malpractice can easily be overseen by an observer observing from the deck of the purse seiner, or the farm. Unreported fish ends up in the farm through regular channels, exploiting the gap in the rules.

The second critical weakness pertains to the fate of the video footage, and its impact on transparency and oversight potential. CMM 17-07 contains a wide diversity of provisions on who is handed original and copied video footage at which time of transfer and caging operations. The summary of these provisions, relating to caging, is that video footage is transmitted to the flag State CPC of the vessel having made the catches, the regional observer observing the caging, the farm representative, national authorities, and the ICCAT Secretariat. CPCs are under an obligation to make available video footage to ICCAT inspectors on demand, as well as to the SCRS. What is missing in these provisions is an oversight mechanism that provides for access to these videos, and third party re-evaluation. Currently, only the CPC parties directly involved in transfers – overseen by the observer – rule on the compatibility of the caging declaration with the video footage. Since the assessment of the footage is a laborious undertaking taking many hours, observers are often not part of the process. This leaves the process to be handled by the parties most directly prone to conflicts of interest, and independent oversight cannot be exercised.

Recommendation 11

Video recording rules ought to be expanded to ensure that both cages (donor/recipient) are fully filmed at the end of every transfer operation, so that their content (full/empty) can be confidently asserted. Video footage, on the other hand, should be placed on a public portion of ICCATs website, with anonymised transfer information (donor/recipient), but containing the final submitted estimated number of fish and volume, allowing for third party verifications to be undertaken. A sample of such footage and transfers – on a randomised or a risk-analysis basis – should be formally assessed by the compliance section of the ICCAT Secretariat, the results of which should then be formally reported to the Compliance Committee.

4.2.2 Observers, transfers and discards

One of the major weaknesses of the observer program as currently provided for is that the observer is carrying out his/her monitoring work standing on the deck of the fishing vessel or the farm. The previous section highlights that part of the illegal activity from which unreported tuna may originate is likely to be taking place underwater during transfers.

Unless the observer is in the water, the observation of such instances of flouting the rules is extremely difficult – and mostly impossible to detect. A billion-euro industry, of which much of the critical transactions are taking place below the surface of the sea, must give itself the means of appropriate observation. While observers aboard regular fishing vessels are appropriately placed on deck – as all harvests make it onto deck and may thus be observed – this is not so in the Bluefin tuna purse seine fishery, where no fish exits the water, and is transferred away into other nets well below the surface, in operations that elude direct observation.

CMM 17-07 regulates discards and their due reporting, so that these may be taken into account, and may thus be deducted from quota – along with the live fish, once numbers and volumes have been estimated. It is obvious that the non-reporting of mortalities during transfers would allow vessel operators to fish more, while mortalities could potentially be the object of concealed collection and landing to feed lucrative black markets – now clearly established as being in existence, and willing and able to absorb this product.

Much of the mortalities occur during the first transfer, and the fish die and pool at the bottom of the purse seine. Divers can – in opposition to what the rules foresee – either cut out and discard mortalities, or cut them out and string them up for later collection. Either way, an observer at the surface will be unable to detect such illegal operation. The net result is that discarded fish are unreported, impairing science and flouting quota allocations, and unreported catches may reach shore, becoming the object of illegal landings and illegal market entries. From a financial point of view, making abstraction of the risk of getting caught and fined, the latter infringement option is the one that produces the largest returns – indicating that these types of infringements are the ones to look out for, to gear up for, to be able to observe and detect – or to observe and deter.

Recommendation 12

Regional observers tasked with monitoring transfers and cagings should be certified as commercial divers, and equipped with autonomous diving equipment enabling them to directly observe transfer and caging operations underwater. It is for the Commission to decide on whether observers should then observe all transfers directly, a part thereof, and/or on which criteria such decisions ought to rest.

4.2.3 Electronic monitoring options for farms

In essence, the sea-based supply chain in tuna fattening operations is made up of purse seiners, towing vessels, and farms. Of these three segments in the sea-based supply chain, the first two are monitored through an array of electronic means, including AIS and VMS, while farms – the simplest to monitor, owing to their proximity to land – are not monitored at all. The only mandatory monitoring undertaken at farms is during caging and harvesting events, when observers and/or inspectors will be present to observe and assert that prepared paperwork corresponds to the caging or harvesting operations that have effectively taken place.

This is insufficient, as farms – between cagings and harvesting – evolve for many months in the absence of any relevant form of monitoring.[26] It is during this period that unaccounted for fish may

[26] Note that this section only covers monitoring, inspections – equally important – are covered in the following section.

be entering farms from sources that remain largely in the realm of guesswork today. They include, but are not limited to, the potential netting and caging of Bluefin tuna roaming closely around farms – by farms, and the reception of clandestine transfers sourced from unreported (and thus illegal) fishing operations.

In Malta, it was found that some farms are in the process of relocating further offshore,[27] and have more rings (cages) in the water than their licenses foresee – with operators explaining that extra rings are empty and thus not in breach of license provisions. An *in situ* visual inspection is necessary to confirm such assertion. It is unclear what legal use is to be made of extra cages not provided for in the license and requiring important investments. These developments certainly give rise to justified questions, and the need to be able to monitor what is going on in farms during periods where no activity requiring mandatory monitoring presence is being signalled by farm operators.

Recommendation 13

The Commission should launch a study to assess the feasibility – technical and financial – to mandate the installation of electronic monitoring technology in all authorised farms. Such technology should comprise as a minimum the installation of arrays of cameras able to cover the strategic areas of farms and their immediate surroundings, and the attachment of VMS transponders to all individual cages present in the farm. A transparent monitoring system needs to be developed on the basis of such technology, enabling CPC CAs and the Compliance Section of the Secretariat to access these feeds and data in real time, and to monitor activities and compliance across all authorised farms.

4.2.4 Farm inspections and hardware

The ICCAT regime for international inspection, laid down in Annex 7 of CMM 17-07, entitled "ICCAT Scheme of Joint International Inspection" does not provide for farm inspections to occur under this program, focusing exclusively on the first two segments – or the vessel operations – of the tuna fattening supply chain instead, when occurring in international waters. With inspections confined to targeting fishing vessel operations, this reflects to a large degree the limitations of the work of the observer, laid out as classic fishery observer work, and being confined to above water observation work in an industry operating under water during much of its sea-based operations. Farm inspections are thus the exclusive preserve of national inspections and competent authorities – even though farms contain fish that have not yet been "landed", and remain in the circuit of international fishing operations.

Documented divergence of national inspection and law enforcement performance – also within and between the countries in which the recent scandal broke – has the tendency to have some of the farming coastal States to develop into champions in enforcing the law (in this case Spain – with its Guardia Civil having opened the case and actively prosecuting offenders), and others (in this case Malta – with a suspended Director General of Fisheries alleged to have facilitated the illegal trade) to emerge as facilitators of criminal activity. The perception of this divergence in State performance relating to inspection and law enforcement, regardless of its ultimate veracity, is what is important. It will have stakeholders pointing out unfairly harsh treatment and erode the will to abide by the rules as a general consequence. There is thus a clear need to extend the remit and the mandate of

[27] Note: the further the farm from the coast, the higher the costs of operation.

joint international inspections to the coastal waters of CPCs in which farms are located, and to subject farms to the same law enforcement processes to which vessels fishing for, or towing Bluefin tuna, are subject.

In addition to this, fishing inspectors face one major challenge when inspecting farms. It is impossible to verify and confirm the content of a cage independently. Foere (2017), *inter alia*, describes the current state of sonar, video and drone technology relating to the provision of solutions to confidently estimate the number and volume of fish in aquaculture cages. This technology has not been developed just as yet, but it appears that a lot of research is going into the development of solutions, and that such instruments may become available in the very near future. Inspectors will need the ability to show up at a farm, and to gauge with a high degree of confidence how many tuna are penned up in any single cage. In the absence of such an instrument, farm inspections will remain largely futile.

Recommendation 14

The Secretariat should be mandated with the active monitoring of emerging technology solutions allowing relevant and non-invasive cage inspections to be carried out at farms, allowing the confident estimation of numbers and volume of fish, and to inform the Commission on its findings on a recurrent basis. The Commission should consider the expansion of the ICCAT Scheme of Joint International Inspection to cover authorised farms located in CPC coastal waters, and develop a formal and comprehensive inspection agenda.

5. Conclusions and Summary of Recommendations

5.1 Findings and Conclusions

In 2012, the ICIJ reported a "wall of secrecy" surrounding E-BFT fisheries, the regulatory framework, and interaction with stakeholders – private and public – regarding the fishery, the trade and the implementation modalities of the BCD. This wall of secrecy remains firmly in place today. The broad and deep lack of transparency regarding matters relating to Bluefin tuna fishing and farming, monitoring and enforcement, and BCD design, implementation and administration at the level of ICCAT – including both the Secretariat and the individual key CPCs – has been re-confirmed during the conduct of this work, and is regrettable.

The fact that all public authorities, national and regional, refused face-to-face meetings and ended up providing zero written feedback is deeply disturbing, and leads to conclude that there is no will to lead, to discuss and to act at those levels where it would be most needed. Overall, such stances limit scrutiny, discussion, and progress to be achieved in the domain of CDS evolution to a select club of mostly government non-specialists with sometimes conflicting agendas, while dedicated exercises by third parties, like the one contained in this document, are stifled, limiting the contributions they can make to foster better and deeper understanding, and to fuel debates at the Commission as to how the system currently in place may be undermined, and – importantly – how it could and should be improved.

Third party scrutiny of ICCAT's CDS serves the purpose of better protecting a stock and a set of fisheries that are known to be the target of organised, transnational criminal networks that continue to illegally harvest and trade Atlantic Bluefin tuna with unabated zeal, focus and dedication. ICCAT – within the terms of its mandate – should foster and value the transparency that supports full-fledged independent assessments to be carried out in a free and unrestricted manner.

ICCAT has been debating the expansion of CDS for many years, and an earlier proposal to study the options was re-submitted by the EU in 2018.[28] The discussion still revolves around the question whether there should be one CDS or several separate CDS to be operated by ICCAT, this, and other similar anachronistic questions have been answered in great detail by FAO in recent years – including the guidance provided in the Voluntary Guidelines on CDS. The need for tuna RFMOs to subject shared tuna stocks to a shared electronic CDS is an obvious and should be a well-understood fact today, and this strategic need must also guide how the eBCD and future eCDS needs must converge in order to pay off, and to lead to solid, capable, harmonised and cost-effective trade-based tools to combat IUU fishing – at ICCAT and beyond. This report insists that focusing on the eBCD as a stand-alone construct is not good enough. ICCATs' currently very narrow and limited eCDS perspective is in need of taking a step backwards, and to consider the strategic dimension of eCDS evolution in a much wider sense.

[28] See Annex 3 of the Report of the 12th Meeting of the Working Group on Integrated Monitoring Measures (IMM) (Madrid, Spain, 9-12 April 2018), providing the EU proposal to consider CDS expansion in ICCAT.

Recent illegal trade events detected in Spain, combined with the assessment provided in this report show that the eBCD in its current form is not fit for purpose, and has few mechanisms that directly serve and enable better law enforcement within domestic markets, and that its current rules facilitate the circulation of illegal products within same markets – rather than hampering or denying it. The need for a fundamentally revised ICCAT CMM on an eCDS, addressing all of the relevant gaps and weaknesses identified in this report – *inter alia* – many of which originally addressed in the non-binding provisions inherent to CMM 10-11, emerges from the assessment contained in this report.

The potential of enhanced capabilities under an electronic system were clear to stakeholders at the beginning of eBCD discussions and development, as well as the need for those elements to be duly regulated in an overhauled CMM. The dangers of passing over them, and instead maintaining the original BCD CMM 11-20 in place, as the basis for the development of the electronic version, were pointed out in the ICCAT CDS assessment report published by WWF in 2014. It is hoped that the assessment contained in this report – further benefitting from the wisdom of hindsight – makes it clear to decision makers that the changing Bluefin tuna market dynamics, combined with the birth-defects of the BCD as a system – defects maintained and partially amplified when it migrated to an electronic platform – must be addressed in order to render the system more effective, and able to address re-emerging IUU fishing and trade dynamics – most of which in Europe – within a landscape of changing trade dynamics, threatening to further undermine system utility and performance.

Given the euro-centricity of recent events, the EU should seriously consider taking a leadership role in championing the work that lies ahead, refraining from expanding demands for derogations, eliminating existing ones, and encouraging the contributions of civil society, the UN, and other t-RFMOs to undertake the revision and upgrading of ICCAT's eCDS, and to make it a success.

5.2 Summary of Recommendations

There are a total of fourteen recommendations made in this report. Some of them are rather wide and encompassing, while a limited number are more detailed, and focus on more specific issues. All recommendations are preceded by, and nested within a dedicated section that lays out the state of affairs in a particular domain, and the issues and challenges that exist and need addressing; implying that the rationale for individual recommendations is always provided.

The first four recommendations all address individual and important aspects of the CMMs defining the eBCD system and its operation, and the design challenges that the system may face overall, or challenges relating to specific elements of the system. The first recommendation calls for a consolidated single CMM laying down an eCDS, which should be broad and encompassing, and cater for the possible future inclusion of other species/fisheries, and which should be developed in discussion and coordination with other t-RFMOs. A model CMM – sourced from FAO work, and adapted to ICCAT – is provided as an annex to this report. The second recommendation is derived from the assessment of the design of the catch and trade certificates and recommends their revision. Model certificates – also sourced from FAO work – are also provided as annexes to this report. A major flaw in need of fixing is that landings and first buyers are not provided for – making it impossible to determine where tuna enters the land-based supply chain in regular fisheries. The third recommendation focuses on the addressing of a number of current system design issues of fundamental importance which need addressing within an overall revision, relating to traceability gaps in longer supply chains, the absence of system-based processing yield monitoring and

enforcement routines, the fact that not all catches are recorded, and that no (or few) self-enforcing routines are part of the system – enabling CAs to override system alerts and validate certificates regardless. Recommendation 4 is far reaching, as it suggests that inward trade must be covered at wholesale level, if current illegal trade issues are going to be tackled through the eCDS as well. The report argues that changing market dynamics, and the strengthening of the EU market for Bluefin tuna drives the need for this recommendation to be considered.

Recommendation 5 recommends that minimum sanctioning standards be defined, specifically as to how they are applied within the context of the eBCD. Current rules are insufficient, contradictory and discriminatory in nature.

Recommendation 6 provides that there is a need to streamline data submission routines (e.g. catch data) across the various CMMs that require the submission of same or similar data. Currently, the submission of same data across similar forms constitutes an undue burden on the private sector. In the same context, it is recommended that a bridging application is made available to the private sector, which allows it to link company IT systems with the eBCD platform, so that BCD and BFTRC data maybe directly harvested from company systems to populate certificates in the eBCD system – before finalisation and sending for validation.

Delving into issues related to derogations and exceptions, Recommendation 7 suggests that tagging in substitution to BCD validation be discontinued, and that tagging per se – for compliance purposes – should either apply to all catches (and individual fish), or none. Recommendation 8 finds that derogations to rules for particular parties, or groups of parties (*i.e.* the EU and its Member States) undermine the system, are discriminatory, and weaken the of compliance resolve across parties. Derogations of that sort should be avoided – and eliminated – at all costs. Derogations for validation of certificates should only be implemented in the system, and with regards to ALL parties, if a system of closed and confirmed trades between trade parties, and enforced through system-resident electronic self-enforcement routines, can be developed – reducing burden of compliance for both private and public sector stakeholders.

Recommendation 9 provides that the currently very limited array of product types need to be expanded, not least as a basis to allow for strong system-based yield factor monitoring routines to be developed in the future.

Moving beyond the realm of the CDS, and with regards to live trade and the wider control provisions of the ICCAT ruleset, recommendation 10 provides that rules for control be consolidated into a single text. With regards to video recordings of transfers, it is suggested under recommendation 11 that video footage showing the state of cages at the end of each transfer must be mandated – in order to ensure that no unreported fish remain and may be transferred later – and that anonymised video footage is made available for third party scrutiny – while the Compliance Section of ICCAT should become mandated to re-run counts on a sample basis, and formally report its findings to the Compliance Committee.

Recommendation 12 provides that observers must be able to dive during transfers, in order to be able to observe what is going on under the surface, based on the finding that classic observer deployment modalities, as applied in ICCAT and as applying in regular fisheries, are no fit for purpose in the domain of tuna fishing, transfers and farming.

Recommendation 13 provides that new rules be developed regarding the electronic monitoring of fattening farms, notably through the installation of cameras collecting photos/videos, and the fitting of VMS transmitters to individual farm cages.

The final recommendation 14 establishes that classic joint RFMO inspection schemes in international waters are not fit for purpose in the live tuna fishing and farming sector, and that tuna fattening farms – not located in international waters – must become subjected to the compliance and enforcement mandate of the joint international inspection scheme also. In addition to this, it is suggested that the ICCAT Secretariat be mandated with the active monitoring of emerging technology solutions allowing cage inspections to be carried out at farms, enabling the confident on-the-spot estimation of numbers and volume of fish in individual cages. The current incapacity to do so renders farm inspections largely toothless.

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Annex I – The Harmonised Tuna eCDS model of FAO TP 596 and its certificates

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 ICCAT 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 ICCAT's electronic catch documentation scheme (e-CDS) documenting the harvest, transhipment, transfer, landing and first sale of tuna and HMS.

2. Trade certificate. An electronic document generated through the interface of ICCAT's e-CDS documenting the importation, processing, domestic trade, 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 transhipment 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 'transhipment' 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 form 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. Transhipment. 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. To

forestall doubt, temporarily placing a catch on land or an artificial structure to facilitate such transfer shall not prevent the transfer from being a transhipment 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 transhipment, 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 national and 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) Atlantic Bluefin Tuna, ii) Bigeye tuna; iii) Yellowfin tuna; iv) Albacore tuna; v) Skipjack tuna. The fishing gear used to harvest these species is covered by the CDS.
23. Other HMS managed by ICCAT 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. Small-scale artisanal fishery products are exempt from the CDS if such products are destined for domestic consumption and 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 destination 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 provides national traceability at the wholesale level. Product movements and commercial transactions inside countries and territories are covered directly in the same way as they are covered for international trade, with the exception that retailers do not need to confirm trades on the electronic platform – to which they shall not have access.

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 export 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 Paragraph 99 and Paragraph 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/inward trade).
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 (or seller) each time a consignment is readied for export (or inward trade). 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 (or bought).
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 inward trade, 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 transhipments, 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 transhipments, 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 ICCAT 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 ICCAT 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 sanctioning 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 supervises the technical implementation of the e-CDS, 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

1. 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.

2. The Commission shall annually review information on CDS implementation and compliance presented by the Secretariat.
3. The Commission will discuss proposals and take decisions with regard to improving implementation of the e-CDS, expanding its coverage or improving its effectiveness.
4. The Commission should invite other tuna Commissions to join the e-CDS if this id deemed to be advantageous.

Annexes I, II and III

[See the models in Annexes 1–3]

Annex I 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*	*Licenced 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***		***1st 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*	*Licenced 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			
Reefer Flag State CA	*Validation date*	*Port State CA*	*Validation date*

Section 7. First point of sale (or farm)		
Port of landing or farm (coordinates & name)		*Landing date (or date of caging)*
Name of agent	*Company name*	*Company address*

Section 8. Port / Farm State counter-validation	
Port / Farm State CA	*Validation date*

Section 9. Second trade (ungraded bulk tuna)				
Line #	*Species*	*Product type*	*Product weight (estimate) in kg*	*Product weight (verified) in kg*
1				
2				
3				

Transport details (international trade only)			***2nd buyer details***		
Export destination (country)	*Bill of lading / airway bill no.*	*Consignment weight*	*Name of manager*	*Company name*	*Company address*
Date of exportation	*Port of exportation*	*Port of destination*			

Section 10. Export State validation		**Import State counter-validation**	
Export (Port) State CA	*Validation date*	*Import State CA*	*Validation date*

* International Radio Call-sign System.

Annex II Simplified Tuna Catch Certificate Model

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

Annex III Tuna Trade Certificate Model

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