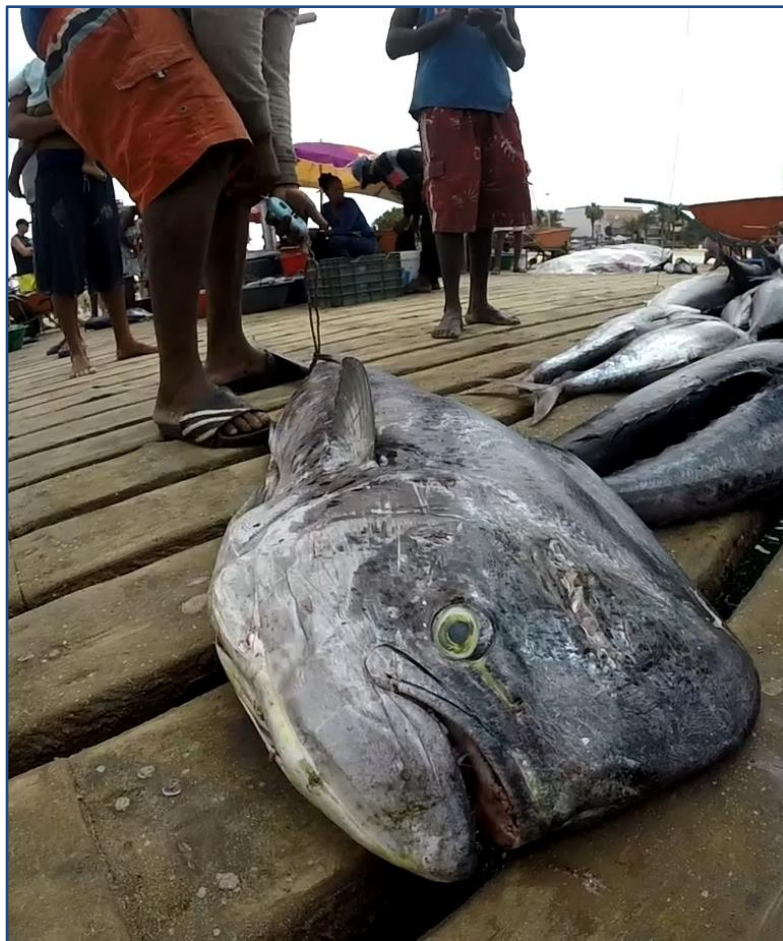


## **Mahi-mahi:**

**Target 75 Sector Update and main sustainability challenges**



**August 2018**



# Mahi-mahi: Target 75 Sector Update and main sustainability challenges

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## PHOTO CREDITS

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## KEYWORDS

Mahi-mahi, *Coryphaena hippurus*, dorado, perico, sustainability, Target 75, Eastern Pacific Ocean, Peru, Ecuador, Costa Rica

## DISCLAIMER

This report was prepared with information available from multiple sources, accessed in July 2018. For the most recent information on the data used, please consult the respective original sources, listed in the “SOURCES OF INFORMATION AND ASSESSMENT CRITERIA” section of the current report.



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## 1 BACKGROUND

This briefing represents an update on the sustainability status of fisheries that supply mahi-mahi (*Coryphaena hippurus*, also called mahi, dolphinfish, perico, or dorado). Unlike the [first edition](#), which was mainly based on information from [FishSource.org](#), this overview analyzes the sustainability status of global mahi-mahi production using the methodology developed by SFP as part of the recent [Target 75 initiative \(T75\)](#).

SFP's T75 initiative has set a goal to see that 75 percent of the world's seafood production is considered sustainable or making regular, verifiable improvements by 2020. To simplify achieving and measuring progress toward this goal, SFP has divided the world's wild fisheries and farmed seafood production into various strategic "sectors," defined by particular groups of species that share the same type of seafood market. While mahi-mahi is not currently included as one of SFP's priority sectors, it is an important seafood commodity for particular markets such as the United States. It is also a seafood sector where both demand and interest in sustainability have been growing in recent years.

In this report, we provide information on the current status of global mahi-mahi production, in terms of the top producing countries, regions, and fisheries. We also estimate the current volumes coming from sustainable and improving fisheries, cover the main sustainability challenges across the main mahi-related fisheries and, finally, map out a path to close the gap to Target 75. We base this analysis on a blend of publicly available data and expert knowledge.

## 2 THE MAHI-MAHI "SECTOR"

The mahi-mahi "sector" comprises only the seafood production from the species *Coryphaena hippurus* (generally reported as mahi, dolphinfish, perico, or dorado). Mahi-mahi is mostly traded fresh/chilled or frozen, and is mostly exported to the United States.

## 3 SOURCES OF INFORMATION AND ASSESSMENT CRITERIA

For the purpose of this analysis, we obtained production volumes and additional information relevant to this analysis from the FAO FishStatJ database, relevant countries' national statistics, and various certification programs' websites and certification reports (e.g., MSC, ASMI RFM) (Table 1).

In terms of the sustainability status analysis, we considered a fishery as "sustainable" if it is [Marine Stewardship Council \(MSC\)](#) certified or green-listed in [SFP's Metrics tool](#). We define a fishery as "improving" if it is certified by one of the following programs: IFFO RS, ASMI RFM, Iceland Responsible Fisheries, Fair Trade USA; if it is under full assessment in the MSC program; or if it is in a fishery improvement project (FIP) that is making good progress (i.e., with a progress rating of A, B, or C using SFP's FIP evaluation tool). Details on the information collected for each of the fisheries covered by one of the programs above are provided in **Table 1**.



**Table 1.** Improvement initiatives and certification programs included in the criteria for the Target 75 analysis of status of improvements

Sustainability program		Information collected	Source(s) of information
Certification programs	ASMI RFM	Certification name, location, current status, species, volume, gear types, FAO region, client country (fleet), etc.	- <a href="https://www.alaskaseafood.org/rfm-certification/certified-fisheries/">https://www.alaskaseafood.org/rfm-certification/certified-fisheries/</a>
	Fair trade US		- <a href="https://www.fairtradecertified.org/business/producer-certification">https://www.fairtradecertified.org/business/producer-certification</a>
	Marine Stewardship Council (MSC)		- <a href="https://fisheries.msc.org/en/fisheries/">https://fisheries.msc.org/en/fisheries/</a>
	IFFO RS		- <a href="https://www.iffors.com/iffors-approved-whole-fish">https://www.iffors.com/iffors-approved-whole-fish</a>
	Icelandic Responsible Fisheries		- <a href="https://www.responsiblefisheries.is/certification/certified-fisheries/">https://www.responsiblefisheries.is/certification/certified-fisheries/</a>
Fishery improvement project (FIP)		FIP progress rating, FIP name, species (and fisheries) covered, location, stock, FIP status, volume, etc.	- <a href="https://www.fishsource.org/improvement-project">https://www.fishsource.org/improvement-project</a> - <a href="https://fisheryprogress.org/">https://fisheryprogress.org/</a>

**Note:** Among the certification programs considered in the Target 75 criteria, only the Marine Stewardship Council (MSC) certification is currently relevant to the mahi-mahi fisheries.

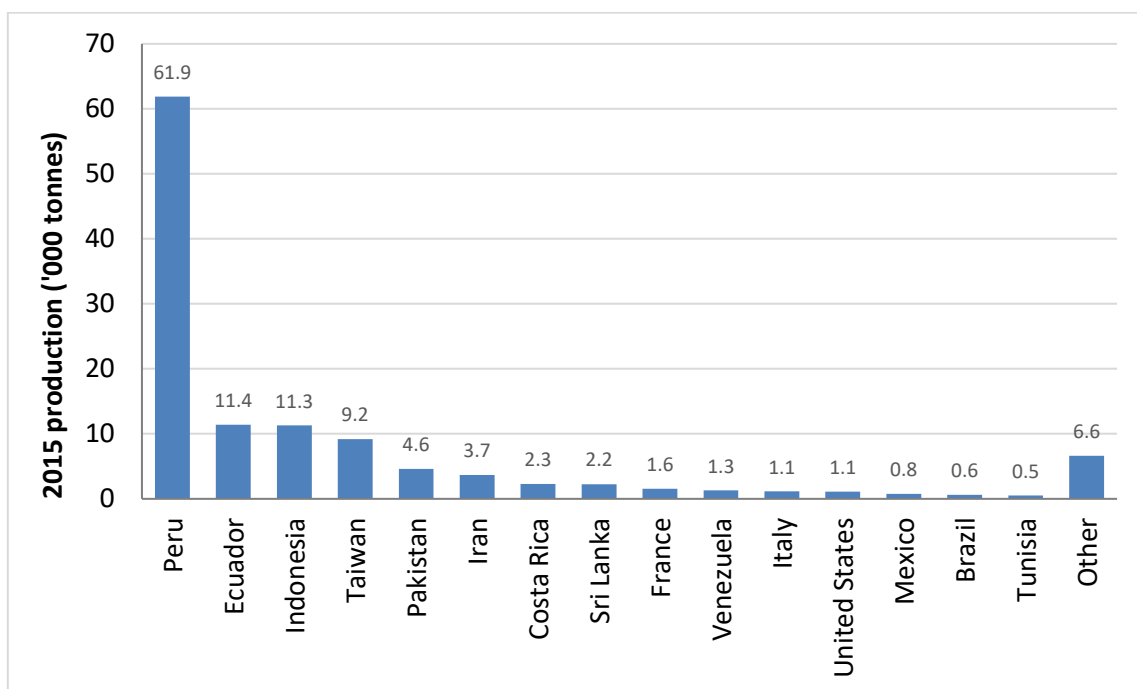
Trade data provide a guide to how much of the production goes to markets that are highly engaged in sustainability issues (e.g., European Union, United States, Australia), markets with activities that engage in improvements (e.g., Brazil, China, Indonesia, Japan), and markets with little evidence of engagement in sustainability or immediate plans to engage in improvements (e.g., Nigeria, Vietnam). Although such trade data provide some insights to the likely influence key markets have, we combined the data with expert opinion and information on the structure of production in each country, in order to determine whether a fishery is a candidate to contribute to the Target 75 initiative’s goal.

For the current main challenges and opportunities for the mahi-mahi fisheries, information was compiled from FishSource on mahi-mahi residing in the Pacific, Atlantic, and Indian Oceans. The key issues identified include unknown stock status (often due to a lack of information on the spatial structure of mahi-mahi), a lack of management both domestically and internationally (i.e. through a regional fishery management organization), and missing or incomplete catch data.

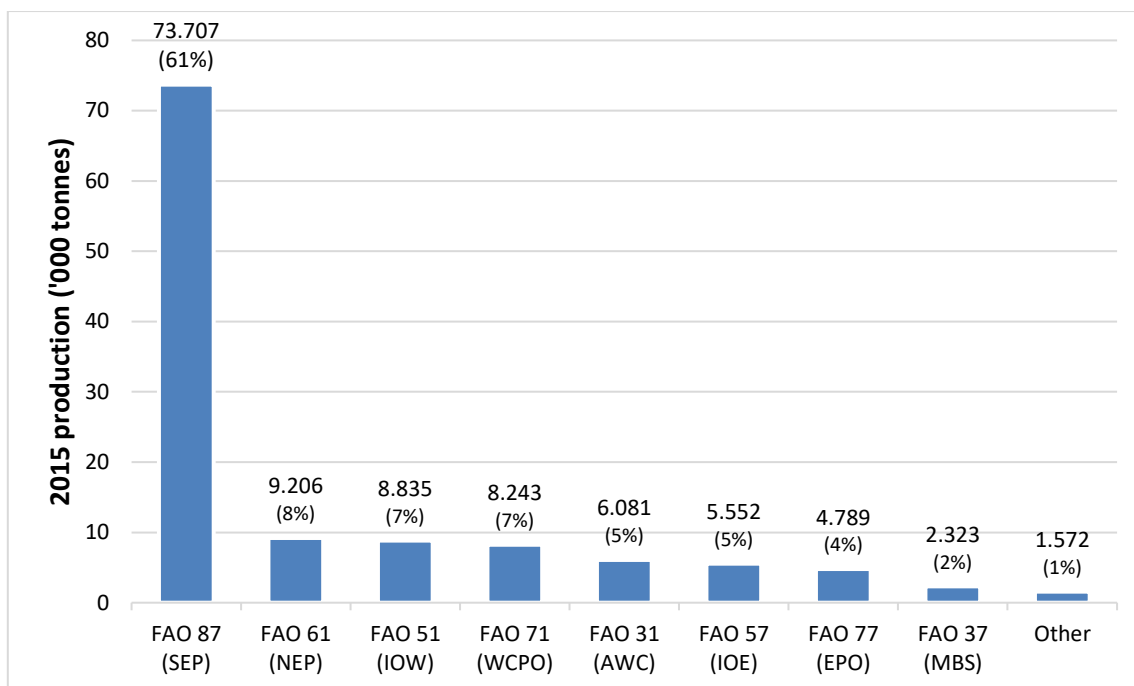


## 4 GLOBAL SUPPLY AND PATTERNS OF TRADE

According to the Food and Agriculture Organization (FAO), annual global production of mahi-mahi was around 120,000 tonnes in 2015. The top 15 producing countries together produce 114,000 tonnes, or 95 percent of total production. Of these 15 countries, three (Peru, Ecuador, and Indonesia) alone contribute about 70 percent of the global mahi-mahi production. During 2015, Peru, the top producing country, reported mahi-mahi landings of 62,000 tonnes (**Figure 1**). The substantial majority (61 percent) of mahi-mahi comes from the southeast Pacific region (FAO 87), followed by 8 percent coming from the northwest Pacific (FAO 61), 7 percent from the western Indian Ocean (FAO 51), and 7 percent from the western and central Pacific (FAO 77). Together, these four regions produce more than 80 percent of all mahi-mahi (**Figure 2**).



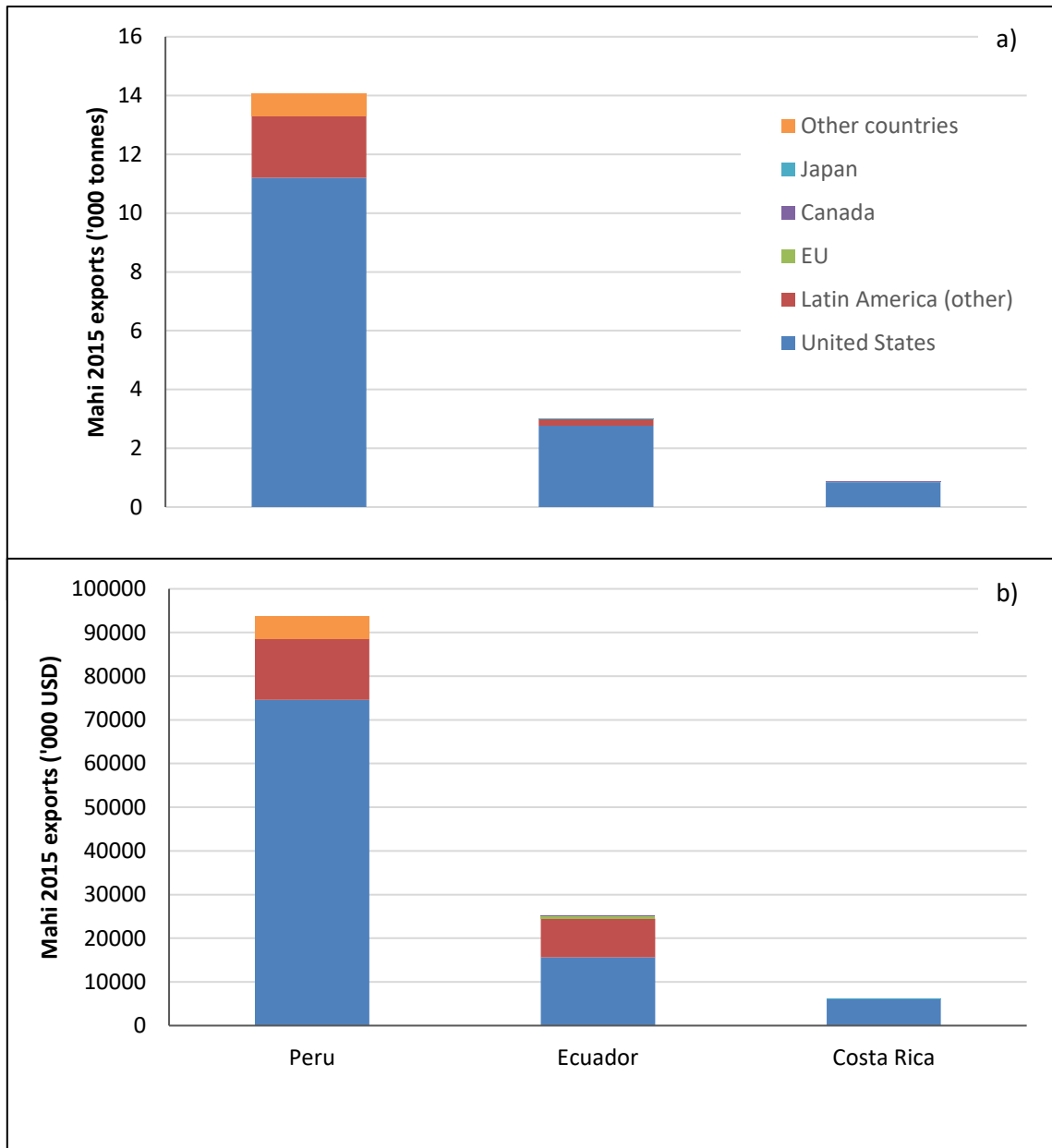
**Figure 1.** Top 15 mahi-mahi producing countries, 2015 production. Source: FishStatJ.



**Figure 2.** 2015 mahi-mahi production for the top eight FAO major fishing areas. Source: FishStatJ. AWC = Western Central Atlantic; EPO = Eastern Central Pacific Ocean; IOE = Eastern Indian Ocean; IOW = Western Indian Ocean; MBS = Mediterranean and Black Sea; NEP = Northeast Pacific; SEP = Southeast Pacific; WCPO = Western Central Pacific Ocean.

Information on the trade of mahi-mahi is limited. In most cases, mahi-mahi products are grouped together with other species in categories such as “frozen fish meat nei<sup>1</sup>” or “frozen fish fillets nei”. The United States is by far the main destination country for traded mahi-mahi caught in Peru, Ecuador, and Costa Rica (the top Latin American producing countries) (**Figure 3**). These three Latin American countries together represented around 65 percent of the total mahi-mahi imports (quantity) by the United States in 2015 (**Figure 5**). According to United States trade statistics, fresh and frozen mahi-mahi imports have been increasing and were 12 times higher in 2017 (USD 245.32 million) than in 1997 (USD 20.32 million) (**Figure 4**). Taiwan and Panama are also important exporting countries to the United States, accounting for 18 percent and 5 percent of imported mahi-mahi respectively (**Figure 6**).

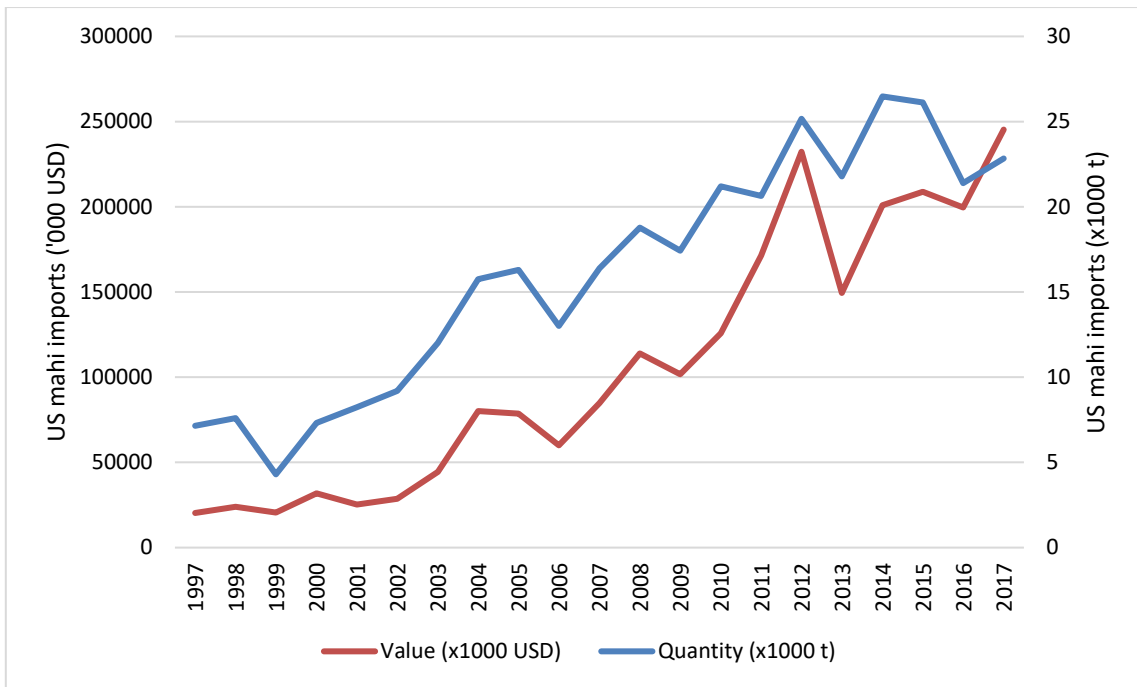
<sup>1</sup> “nei”, nowhere else identified



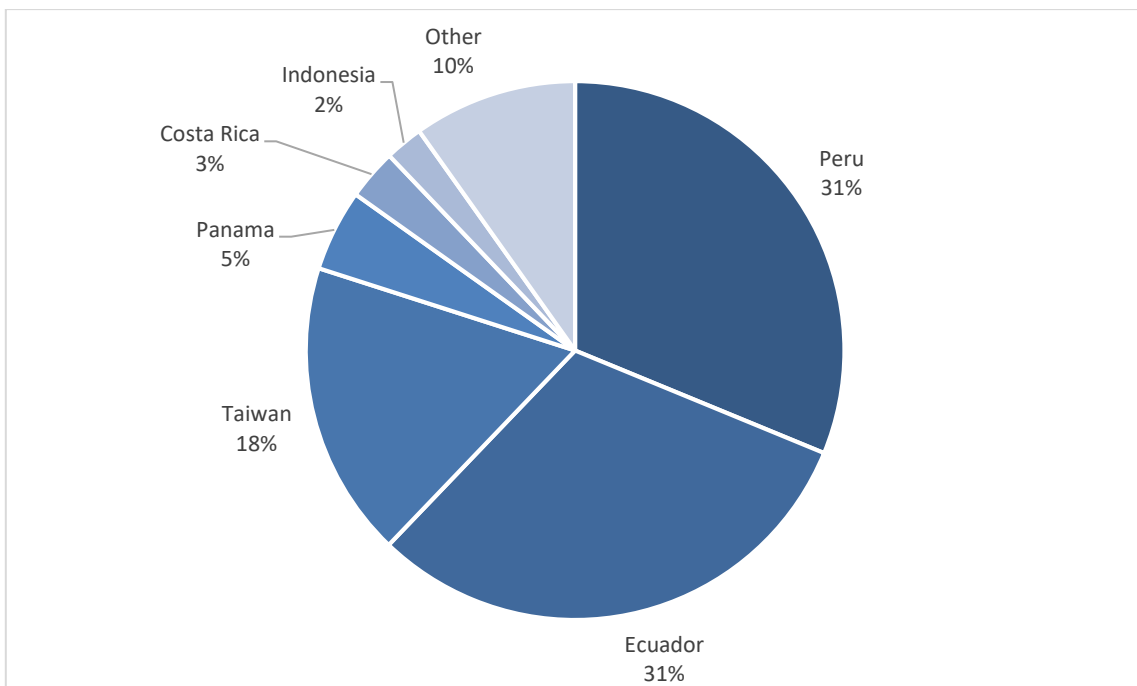
**Figure 3.** 2015 mahi exports by Peru, Ecuador, and Costa Rica, by main importing country, in terms of a) quantity ('000 tonnes) and b) value ('000 USD).<sup>2</sup>

<sup>2</sup> Discrepancies in traded value and volume of mahi between Figures 3 and 5 are due to the different data sources for each of the figures. Figure 3 is based on reported national exports of the respective main mahi-exporting Latin American countries, while Figure 5 is based on reported mahi (dolphinfish) imports into the US.

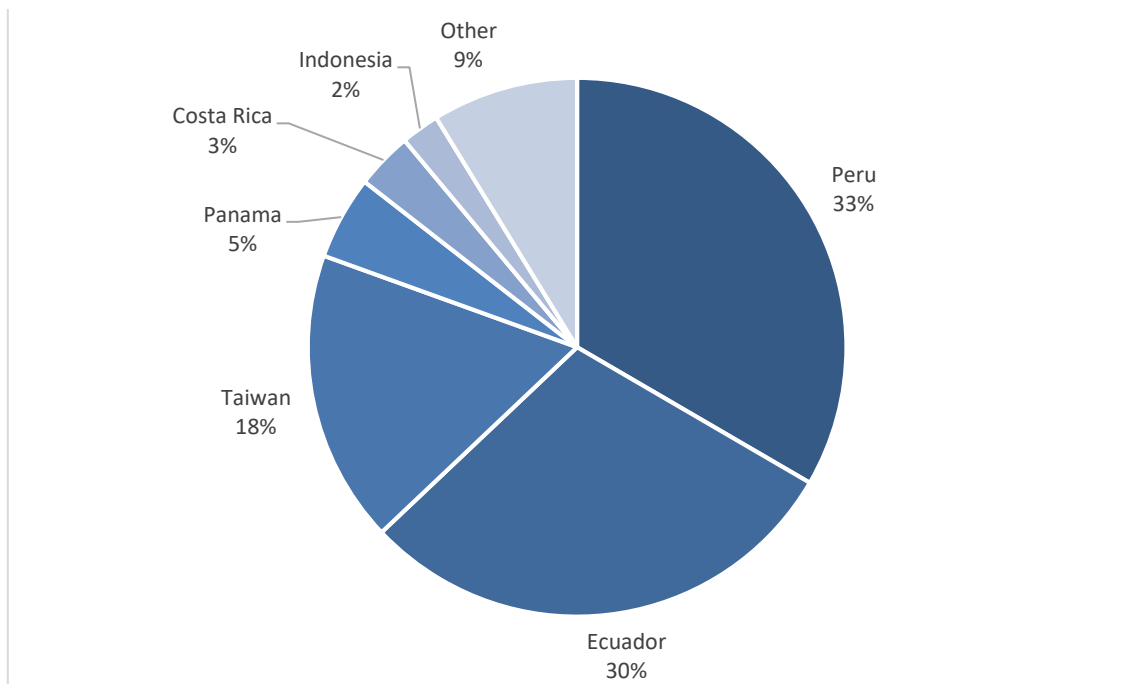




**Figure 4.** Annual mahi imports (by quantity and value) by the United States between 1997 and 2017. Source: NMFS (2018)



**Figure 5.** Percentage of total mahi imports (quantity) by the United States in 2015 (26,100 tonnes), by top exporting country. Source: NMFS (2018)



**Figure 6.** Percentage of total mahi imports (value) by the United States in 2015 (208.8 million USD), by top exporting country. Source: NMFS (2018)

## 5 COUNTRY-SPECIFIC SUPPLY AND PATTERNS OF TRADE: PERU, ECUADOR, COSTA RICA

This section presents a brief summary of the latest statistics on supply and patterns of trade for the three main Latin American mahi-producing countries: Peru, Ecuador, and Costa Rica.

### 5.1 Peru

Mahi was Peru’s fourth biggest seafood commodity (capture production) in 2015, with landings of 60,909 tonnes. This represents only 1.28 percent of total national production, however, due to the large volume of the Peruvian anchoveta fishery, the largest fishery in the world (78 percent of total Peruvian landings in 2015) (FAO FishStatJ 2018a).

Market trade data is limited. Although mahi is known as an important exported commodity, there are no specific statistics on Peruvian mahi exports in the FAO FishStatJ database. The species is likely exported lumped with other species in one of the following categories: “Fish fillets, frozen, nei,” “Fish meat, whether or not minced, frozen, nei,” or “Fish, frozen, nei” (FAO FishStatJ 2018a).

According to the latest US trade statistics, Peru is by far the largest exporter to the US, representing around one third (33.4 percent) of the total mahi imports by value into the US market in 2015. The second largest exporter of mahi into the US is Ecuador (29.5 percent) (**Appendix I**).



## 5.2 Ecuador

Mahi-mahi is the most important species in Ecuador's artisanal fisheries, making up 15-25 percent of the country's global production and 55 percent of their large pelagic landings (IATTC 2014). In 2015, mahi was the 10<sup>th</sup>-most-captured species in Ecuador, with 11,407 tonnes landed (FAO 2017). In recent years, Ecuador exported most of the mahi-mahi it landed to the United States (88-92 percent). The second biggest end market for Ecuadorian mahi is Latin America (8-12 percent of mahi exports in recent years) (SENAE 2017).

Between 2013 and 2017, according to national statistics, mahi exports by Ecuador decreased from 5,549 tonnes to 2,776 tonnes (SENAE 2017).

Ecuador exports mostly frozen mahi-mahi, but also high amounts of fresh mahi. For example, in 2015, Ecuador exported 4,514 tonnes of frozen mahi and 3,569 tonnes of fresh mahi (NOAA, 2018) to the United States. This represents 31 percent of the total fresh mahi imported (by quantity) to the US. This makes Ecuador the leading exporter of fresh mahi, followed by Panamá and Costa Rica (16 percent and 11 percent respectively) (**Appendix II, Appendix III**).

## 5.3 Costa Rica

Costa Rica's mahi exports represent 3.5 percent of its total seafood exports (INCOPECA, 2015). The US market is the largest importer by far of Costa Rica's mahi-mahi, with 99 percent of mahi exports going to the United States.

Unlike Ecuador and Peru, Costa Rica exports more fresh mahi than frozen mahi to the United States. In fact, Costa Rica is the third-largest exporter of fresh mahi after Ecuador and Panamá. In 2015 the United States imported 562 tonnes of fresh mahi and only 231 tonnes of frozen mahi from Costa Rica (NOAA, 2018).

# 6 IMPROVEMENT PROGRESS TO DATE

Based on 2015 production data, 71,500 tonnes, or 59 percent of global mahi production, are considered sustainable or improving (see **Table 2**).

## 6.1 MSC-Certified Fisheries

There are no MSC-certified fisheries to date.

## 6.2 Green-rated by SFP Metrics

There are no green-rated mahi fisheries designated by SFP Metrics to date.



### 6.3 MSC Full-Assessment fisheries

There are no fisheries in MSC full assessment to date.

### 6.4 FIPs with A-C rated progress/AIPs

There are currently nine fishery improvement projects that include mahi-mahi in their scope. Six of these FIPs are specific to mahi-mahi longline fisheries. There are two in Peru, and one in each Panama, Ecuador, Guatemala, and Taiwan. The three additional FIPs (one in Hawaii and two in Indonesia) are multispecies longline fisheries that target tuna but also capture mahi-mahi. Two prospective FIPs include the Indonesia Tuna and Large Pelagics FIP and the Costa Rica Tuna, Swordfish, and Mahi-mahi FIP.

Eight of these FIPs are currently (July 2018) considered to be “improving,” i.e., with a progress rating of C or better (**Appendix IV**). One FIP has been recently made “inactive” by Fishery Progress, due to late reporting. The mahi-mahi FIP in Peru produces by far the largest of this “improving” volume (53,297 tonnes), followed distantly by the FIP in Ecuador (9,672 tonnes). The three multispecies FIPs produce very small amounts of mahi-mahi.

- [Ecuador mahi-mahi - longline](#)
- [Guatemala Pacific mahi-mahi](#)
- [Hawaii tuna and large pelagics - longline](#)
- [Longline tuna and large pelagics \(Indonesia\)](#)
- [Panama Pacific mahi-mahi and yellowfin tuna](#)
- [Peru mahi-mahi longline \(WWF\)](#)
- [Peru mahi-mahi longline \(Confremar\)](#)
- [Taiwan Hsin-Kang mahi-mahi longline](#)

**Table 2.** Mahi global production considered sustainable or improving per SFP criteria

T75 Category	Volume (tonnes)	% of Global Production
<b>Sustainable:</b> MSC-C or Metrics Green	0	0.0%
<b>Improving:</b> MSC FA, FIPs (rated A-C)	71,508	59.4%
<b>Total</b>	<b>71,508</b>	<b>59.4%</b>



## 7 CLOSING THE GAP TO TARGET 75: OPPORTUNITIES AND CHALLENGES

### 7.1 Existing Supply Chain Leverage and Interest

The primary target fisheries for improvement are those that existing Supply Chain Roundtable (SR) participants have already identified as of-interest and those that are currently undergoing improvements under FIPs and prospective, yet expanding, FIP coverage. If improvement efforts in Peru, Ecuador, Indonesia, and Costa Rica cover the entire national production, an additional 18,401 tonnes of production would enter the improving category, covering an added 15.3 percent of the global total (see **Appendix V**).

Supply Chain Roundtables relevant to mahi-mahi include:

- The Indonesia Tuna and Large Pelagics SR focuses on longline and handline fisheries in the Indonesian EEZ, Indian Ocean, and Western Central Pacific Ocean.
- The Eastern Pacific Ocean (EPO) SR is supporting and monitoring mahi FIPs in Ecuador, Guatemala, Costa Rica (prospective), Panama, and Peru. Also, this SR is focusing on influencing regional policy improvements at the Regional Fishery Management Organization (RFMO) level.

While there are ongoing and prospective improvement efforts in five of the 15 most important producing countries, the volumes covered by FIPs are not sufficient to reach the 75 percent goal. Expanding the coverage of currently existing FIPs in priority fisheries (Peru, Ecuador, and Taiwan), plus new additions such as the Indonesia Large Pelagics and the Costa Rica Mahi-mahi, Tuna, and Swordfish FIPs (currently prospective) would close the gap to T75. If participation is ensured at the national level within both currently ongoing (Peru, Ecuador, Taiwan) and prospective efforts (Indonesia and Costa Rica), over 80 percent of the global production would be covered (75 percent if considering only Peru, Ecuador, Indonesia, and Costa Rica). Therefore, priority focus should be placed on catalyzing the Indonesia and Costa Rica Large Pelagics FIPs, and ensuring adequate support to currently ongoing FIPs for them to expand coverage of national catches.

Mahi-mahi is a highly migratory species whose management rests upon RFMOs' authority in key regions. Ongoing FIPs face important challenges in mobilizing improvements at the stock level, as they represent only a small portion of stock-level catches. As a result, further to the need for expanded participation in the aforementioned national FIPs, improved regional coordination between FIPs is needed in order to achieve stock-level impact. As the vast majority of the global production of mahi-mahi occurs within the Eastern Pacific Ocean (see **Figure 2**), regional aggregation of improvement efforts within the EPO region is needed to foster better science and management at the Inter-American Tropical Tuna Commission (IATTC) level.

### 7.2 Urgent Additions Requiring New Leverage

The main leverage to mobilize improvements in mahi-mahi fisheries rests with the US market. Due to the limited data on the exports of mahi-mahi from producing countries, it is difficult to know which other markets need to be engaged to mobilize improvements. Yet, ensuring expanded participation in currently ongoing mahi FIPs by national fishery stakeholders and key vendors requires expanded



engagement of suppliers, especially in the Eastern Pacific Large Pelagics Supply Chain Roundtable, which covers the area with the highest concentration of catches. Increased leverage is also needed from suppliers of Indonesian tuna and large pelagics.

## 8 CURRENT MAIN SUSTAINABILITY CHALLENGES / IMPROVEMENT OPPORTUNITIES

The stock status of mahi-mahi is unknown throughout its range. In the eastern Pacific Ocean, the IATTC has attempted a stock assessment, which is considered preliminary, and there are no reference points in place to determine the status of mahi-mahi against sustainable levels. In the Atlantic Ocean, mahi-mahi is assessed as a group along with other tuna and pelagic species, and their status is unknown. In the Indian Ocean and western and central Pacific Ocean, mahi stocks have not been assessed (**Table 3**).

Management varies by location. For example, fisheries in South and North America are managed at the country level, while in other locations there is no management in place. The only RFMOs that have formally addressed mahi-mahi are the IATTC, which operates in the eastern Pacific Ocean and the International Commission for the Conservation of Atlantic Tunas (ICCAT). In most mahi-mahi fisheries, there are issues with monitoring, control, and surveillance, as well as with proper data recording and reporting.

**Table 3.** Main issues for each of the top mahi fisheries. *Source:* FishSource.org

Sustainability challenge	Country / fishery		
	Peru   Drifting Longline	Ecuador   Pole-lines hand-operated	Ecuador   Drifting Longline
Stock status	Data-deficient	Data-deficient	Data-deficient
Management	There are few management measures for fisheries that target Eastern Pacific mahi-mahi. There is no harvest control rule, target, or limit reference points.	There are few management measures for fisheries that target Eastern Pacific mahi-mahi. There is no harvest control rule, target, or limit reference points.	There are few management measures for fisheries that target Eastern Pacific mahi-mahi. There is no harvest control rule, target, or limit reference points.
Environment	Low observer coverage; interactions with sea turtles and sharks	Baitfish	Low observer coverage; interactions with sea turtles and sharks



## 9 FINAL REMARKS

Although it represents a relatively small level of production compared to other marine species, mahi is a key seafood commodity in countries like the United States, and is usually traded fresh and frozen. The importance of mahi in the international markets has been growing rapidly, in particular in the United States – the top importing country. Despite this importance, there has been little research on mahi.

A number of relevant management challenges have been identified for mahi, including unknown stock status (often due to a lack of information on the spatial structure of mahi-mahi), a lack of management both domestically and internationally (i.e. through a regional fishery management organization), and missing or incomplete catch data.

Several improvement initiatives on the main mahi fisheries have been initiated in recent years, in order to address the main sustainability challenges. So far, NGOs and industry have been able to make some progress on mahi improvement efforts, placing 59 percent of global production in the sustainable or improving categories. Most of this success has been achieved via improvement projects that are currently active in Peru, Ecuador, and Taiwan, three of the top five mahi-producing countries in the world.

An additional 15 percent of global production could be mobilized into the sustainable or improving categories by 2020 by engagement with the existing supply chain roundtables (SRs). To do this, SR work should focus on: a) encouraging producers and key vendors to engage in currently ongoing FIPs, to ensure national coverage of improvement efforts in key countries (Peru, Ecuador, Indonesia, and Costa Rica); b) requesting national delegates to advocate for the adoption of improvements in science and management in mahi fisheries at the RFMO level; c) encouraging FIP implementers and key vendors in the EPO region to coordinate efforts to enhance regional impact at the IATTC level; and d) providing support to new and current FIPs.



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**Appendix I.** Total fresh and frozen mahi imports (quantity and value) by the United States in 2015, by exporting country. Source: NMFS (2018).

Country	Imports ('000 tonnes)	% of total (quantity)	Imports ('000 USD)	% of total (value)
Peru	8.2	31.2%	69709.1	33.4%
Ecuador	8.1	30.9%	61665.1	29.5%
Taiwan	4.6	17.8%	36692.1	17.6%
Panama	1.3	4.9%	10465.7	5.0%
Costa Rica	0.8	3.0%	7100.5	3.4%
Indonesia	0.6	2.3%	4810.6	2.3%
Vietnam	0.5	1.8%	3545.2	1.7%
Guatemala	0.4	1.5%	2632.7	1.3%
Brazil	0.4	1.5%	2738.3	1.3%
Trinidad & Tobago	0.3	1.3%	2506.1	1.2%
Nicaragua	0.2	0.8%	1503.4	0.7%
Fiji	0.2	0.7%	1105.2	0.5%
China	0.1	0.5%	891.8	0.4%
Mexico	0.1	0.4%	375.8	0.2%
Chile	0.1	0.3%	893.2	0.4%
Tonga	0.1	0.2%	341.7	0.2%
Malaysia	0.1	0.2%	349.3	0.2%
El Salvador	0.0	0.1%	350.6	0.2%
Japan	0.0	0.1%	142.2	0.1%
Australia	0.0	0.1%	194.2	0.1%
Thailand	0.0	0.1%	120.2	0.1%
Suriname	0.0	0.1%	110.3	0.1%
India	0.0	0.1%	106.0	0.1%
New Zealand	0.0	0.1%	87.9	0.0%
French Polynesia	0.0	0.0%	71.6	0.0%
Dominican Republic	0.0	0.0%	91.0	0.0%
Canada	0.0	0.0%	28.7	0.0%
Philippines	0.0	0.0%	38.2	0.0%
Venezuela	0.0	0.0%	29.1	0.0%
Grenada	0.0	0.0%	6.1	0.0%
Senegal	0.0	0.0%	10.4	0.0%
Barbados	0.0	0.0%	13.0	0.0%
Sri Lanka	0.0	0.0%	8.6	0.0%
Greece	0.0	0.0%	4.1	0.0%
<b>Total</b>	<b>26.1</b>		<b>208737.8</b>	



**Appendix II.** Total frozen mahi imports (quantity and value) by the United States in 2015, by exporting country.  
Source: NMFS (2018).

Country	Imports ('000 tonnes)	% of total (quantity)	Imports ('000 USD)	% of total (value)
Peru	8.1	41.9%	69070.7	42.2%
Ecuador	4.5	23.4%	42096.5	25.7%
Taiwan	4.4	22.9%	34925.2	21.3%
Indonesia	0.6	3.1%	4810.6	2.9%
Vietnam	0.5	2.4%	3528.8	2.2%
Panama	0.5	2.3%	3465.7	2.1%
Costa Rica	0.2	1.2%	2191.2	1.3%
Guatemala	0.1	0.7%	768.1	0.5%
China	0.1	0.7%	891.8	0.5%
Chile	0.1	0.5%	887.6	0.5%
Nicaragua	0.1	0.3%	455.6	0.3%
Malaysia	0.1	0.3%	349.3	0.2%
Thailand	0.0	0.1%	120.2	0.1%
India	0.0	0.1%	106.0	0.1%
Suriname	0.0	0.1%	85.5	0.1%
Philippines	0.0	0.0%	18.0	0.0%
Mexico	0.0	0.0%	24.5	0.0%
<b>Total</b>	<b>19.3</b>		<b>163795.4</b>	



**Appendix III.** Total fresh mahi imports (quantity and value) by the United States in 2015, by exporting country.  
Source: NMFS (2018).

Country	Imports ('000 tonnes)	% of total (quantity)	Imports ('000 USD)	% of total (value)
Ecuador	3.6	52.2%	19568.6	43.5%
Panama	0.8	12.1%	7000.0	15.6%
Costa Rica	0.6	8.2%	4909.3	10.9%
Brazil	0.4	5.6%	2738.3	6.1%
Trinidad & Tobago	0.3	4.8%	2506.1	5.6%
Guatemala	0.3	3.8%	1864.5	4.1%
Taiwan	0.2	3.2%	1766.9	3.9%
Fiji	0.2	2.6%	1105.2	2.5%
Nicaragua	0.1	1.9%	1047.8	2.3%
Mexico	0.1	1.6%	351.3	0.8%
Peru	0.1	1.1%	638.4	1.4%
Tonga	0.1	0.8%	341.7	0.8%
El Salvador	0.0	0.5%	350.6	0.8%
Japan	0.0	0.3%	142.2	0.3%
Australia	0.0	0.3%	194.2	0.4%
New Zealand	0.0	0.2%	87.9	0.2%
French Polynesia	0.0	0.2%	71.6	0.2%
Dominican Republic	0.0	0.1%	91.0	0.2%
Canada	0.0	0.1%	28.7	0.1%
Suriname	0.0	0.1%	24.8	0.1%
Venezuela	0.0	0.1%	29.1	0.1%
Grenada	0.0	0.0%	6.1	0.0%
Philippines	0.0	0.0%	20.2	0.0%
Senegal	0.0	0.0%	10.4	0.0%
Barbados	0.0	0.0%	13.0	0.0%
Vietnam	0.0	0.0%	16.3	0.0%
Sri Lanka	0.0	0.0%	8.6	0.0%
Chile	0.0	0.0%	5.6	0.0%
Greece	0.0	0.0%	4.1	0.0%
<b>Total</b>	<b>6.8</b>		<b>44942.4</b>	



**Appendix IV.** List and details of the currently active FIPs that include mahi as one of the covered species

FIP name	FIP type	Start date	FIP progress rating	Stage	Volume ('000 tonnes)
<a href="#">Ecuador mahi-mahi - longline</a>	Comprehensive	01-01-09	A	5	9.672
<a href="#">Guatemala mahi-mahi</a>	Comprehensive	1-Apr-13	C	4	no specific FIP volume available <sup>(3)</sup>
<a href="#">Panama yellowfin tuna and mahi-mahi</a>	Basic	01-12-11	A	4	no specific FIP volume available <sup>(3)</sup>
<a href="#">Peru mahi-mahi longline (Confremar)</a>	Basic	01-10-16	C	4	5.5
<a href="#">Peru mahi-mahi longline (WWF)</a>	Comprehensive	01-12-12	A	4	53.297
<a href="#">Taiwan Hsin-Kang mahi-mahi longline</a>	Comprehensive	01-06-15	B	4	2.6
<a href="#">Hawaii tuna and large pelagics - longline</a>	Basic	01-01-12	B	5	9.843 <sup>(2,3)</sup>
<a href="#">Longline tuna and large pelagics</a>	Basic	01-07-15	B	4	no specific FIP volume available <sup>(3)</sup>

**Notes:** (1) Main sources of information: [FishSource.org](http://FishSource.org) and [fisheryprogress.org](http://fisheryprogress.org). (2) Reported FIP volume refers to the production volume of all the species covered by the FIP. (3) The mahi-specific FIP volume used in the Target 75 analysis was inferred based on available information.



**Appendix V.** Target mahi fisheries using existing supply chain leverage and interest

Production Source	2015 Landings (tonnes)	% Global Production	Improvement Outlook
Common dolphinfish - Indonesia FAO 71	8,030	6.7%	Catalyzing FIP covering all national production. FIP focused on improving national and regional management. Currently prospective.
Common dolphinfish - Indonesia FAO 57 <sup>3</sup>	3,269	2.7%	Catalyzing FIP covering all national production. FIP focused on improving national and regional management. Currently prospective.
Common dolphinfish - Peru FAO 87	3,112	2.6%	Expand participation of industry and suppliers to cover all national catches.
Common dolphinfish - Costa Rica FAO 77	2,254	1.9%	Catalyzing FIP covering all national production. Currently prospective.
Common dolphinfish - Ecuador FAO 87	1,736	1.4%	Expand participation of industry and suppliers to cover all national catches.
<b>Total</b>	<b>18,401</b>	<b>15.3%</b>	

<sup>3</sup> A small portion (approx. 10-15 tonnes) of this mahi production was included in a FIP currently considered as inactive (Indonesia/Indian Ocean tuna and large pelagics - longline), under [SFP's evaluation tool for FIP progress](#).



**Appendix VI.** Full list of fisheries by sustainability category, in terms of the target 75 criteria

Sustainability category / Fishery	2015 Production (‘000 tonnes)	% of 2015 production
<b>Improving</b>	<b>71.508</b>	<b>59.4%</b>
Common dolphinfish - Peru FAO 87 (FIP: Peru mahi-mahi longline (WWF))	53.3	44.3%
Common dolphinfish - Ecuador FAO 87 (FIP: Ecuador mahi-mahi - longline)	9.7	8.0%
Common dolphinfish - Peru FAO 87 (FIP: Peru mahi-mahi longline (Confremar))	5.5	4.6%
Common dolphinfish - Taiwan Province of China FAO 61 (FIP: Taiwan Hsin-Kang mahi-mahi longline)	2.6	2.2%
Common dolphinfish - Panama FAO 77 (FIP: Panama yellowfin tuna and mahi-mahi)	0.4	0.3%
Common dolphinfish - United States of America FAO 77 (FIP: Hawaii tuna and large pelagics - longline)	0.0	0.0%
Common dolphinfish - Indonesia FAO 57 (FIP: Longline tuna and large pelagics)	0.0	0.0%
Common dolphinfish - Guatemala FAO 77 (FIP: Guatemala mahi-mahi)	0.0	0.0%
<b>Non-Improving (in SR)</b>	<b>19.928</b>	<b>16.6%</b>
Common dolphinfish - Indonesia FAO 71	8.030	6.7%
Common dolphinfish - Indonesia FAO 57	3.258	2.7%
Common dolphinfish - Peru FAO 87	3.112	2.6%
Common dolphinfish - Costa Rica FAO 77	2.254	1.9%
Common dolphinfish - Ecuador FAO 87	1.736	1.4%
Common dolphinfish - Mexico FAO 77	0.761	0.6%
Common dolphinfish - Nicaragua FAO 77	0.375	0.3%
Common dolphinfish - Chile FAO 87	0.372	0.3%
Common dolphinfish - Spain FAO 87	0.019	0.0%
Common dolphinfish - Indonesia FAO 57 (Past FIP: Indonesia/Indian Ocean tuna and large pelagics - longline)	0.011	0.0%
<b>Non-Improving (NOT in SR)</b>	<b>28.9</b>	<b>24.0%</b>
Common dolphinfish – Taiwan (Republic of China) FAO 61	6.6	5.5%
Common dolphinfish - Pakistan FAO 51	4.6	3.8%
Common dolphinfish - Iran (Islamic Rep. of) FAO 51	3.7	3.1%
Common dolphinfish - Sri Lanka FAO 57	2.2	1.9%
Common dolphinfish - France FAO 31	1.6	1.3%



Sustainability category / Fishery	2015	
	Production ('000 tonnes)	% of 2015 production
Common dolphinfish - Venezuela, Boliv Rep of FAO 31	1.3	1.1%
Common dolphinfish - Italy FAO 37	1.1	0.9%
Common dolphinfish - Brazil FAO 41	0.6	0.5%
Common dolphinfish - Tunisia FAO 37	0.5	0.4%
Common dolphinfish - United States of America FAO 77	0.5	0.4%
Common dolphinfish - Saint Lucia FAO 31	0.5	0.4%
Common dolphinfish - Barbados FAO 31	0.5	0.4%
Common dolphinfish - United States of America FAO 31	0.5	0.4%
Common dolphinfish - French Polynesia FAO 77	0.5	0.4%
Common dolphinfish - Guadeloupe FAO 31	0.4	0.3%
Common dolphinfish - Malta FAO 37	0.3	0.3%
Common dolphinfish - Dominica FAO 31	0.3	0.2%
Common dolphinfish - Martinique FAO 31	0.3	0.2%
Common dolphinfish - Senegal FAO 34	0.2	0.2%
Common dolphinfish - Réunion FAO 51	0.2	0.2%
Common dolphinfish - Dominican Republic FAO 31	0.2	0.2%
Common dolphinfish - Libya FAO 37	0.2	0.2%
Common dolphinfish - Suriname FAO 31	0.2	0.2%
Common dolphinfish - Comoros FAO 51	0.1	0.1%
Common dolphinfish - Sao Tome and Principe FAO 34	0.1	0.1%
Common dolphinfish - Spain FAO 37	0.1	0.1%
Common dolphinfish - Benin FAO 34	0.1	0.1%
Common dolphinfish - Philippines FAO 71	0.1	0.1%
Common dolphinfish - Spain FAO 41	0.1	0.1%
Common dolphinfish - Grenada FAO 31	0.1	0.1%
Common dolphinfish - Guam FAO 71	0.1	0.1%
Common dolphinfish - United States of America FAO 21	0.1	0.1%



Sustainability category / Fishery	2015 Production ( '000 tonnes)	% of 2015 production
Common dolphinfish - Saint Vincent/Grenadines FAO 31	0.1	0.0%
Common dolphinfish - Puerto Rico FAO 31	0.1	0.0%
Common dolphinfish - Antigua and Barbuda FAO 31	0.1	0.0%
Common dolphinfish - Saint Kitts and Nevis FAO 31	0.1	0.0%
Common dolphinfish - Spain FAO 34	0.1	0.0%
Common dolphinfish - Spain FAO 51	0.1	0.0%
Common dolphinfish - Spain FAO 47	0.0	0.0%
Common dolphinfish - Portugal FAO 47	0.0	0.0%
Common dolphinfish - Maldives FAO 51	0.0	0.0%
Common dolphinfish - Kenya FAO 51	0.0	0.0%
Common dolphinfish - Côte d'Ivoire FAO 34	0.0	0.0%
Common dolphinfish - Costa Rica FAO 31	0.0	0.0%
Common dolphinfish - Togo FAO 34	0.0	0.0%
Common dolphinfish - US Virgin Islands FAO 31	0.0	0.0%
Common dolphinfish - Trinidad and Tobago FAO 31	0.0	0.0%
Common dolphinfish - Cuba FAO 31	0.0	0.0%
Common dolphinfish - Spain FAO 57	0.0	0.0%
Common dolphinfish - Northern Mariana Is. FAO 71	0.0	0.0%
Common dolphinfish - United Arab Emirates FAO 51	0.0	0.0%
Common dolphinfish - Canada FAO 21	0.0	0.0%
Common dolphinfish - Portugal FAO 41	0.0	0.0%
Common dolphinfish - Portugal FAO 34	0.0	0.0%
Common dolphinfish - Portugal FAO 51	0.0	0.0%
Common dolphinfish - Mauritius FAO 51	0.0	0.0%
Common dolphinfish - Spain FAO 81	0.0	0.0%
Common dolphinfish - France FAO 34	0.0	0.0%
Common dolphinfish - Mexico FAO 31	0.0	0.0%





Sustainability category / Fishery	2015 Production ( '000 tonnes)	% of 2015 production
Common dolphinfish - Madagascar FAO 51	0.0	0.0%
Common dolphinfish - South Africa FAO 51	0.0	0.0%
Common dolphinfish - Albania FAO 37	0.0	0.0%
Common dolphinfish - Mayotte FAO 51	0.0	0.0%
Common dolphinfish - France FAO 51	0.0	0.0%
Common dolphinfish - Bermuda FAO 31	0.0	0.0%
Common dolphinfish - Other nei FAO 31	0.0	0.0%
Common dolphinfish - Portugal FAO 57	0.0	0.0%
Common dolphinfish - Saint Helena FAO 47	0.0	0.0%
Common dolphinfish - South Africa FAO 47	0.0	0.0%
Common dolphinfish - Portugal FAO 81	0.0	0.0%
Common dolphinfish - Seychelles FAO 51	0.0	0.0%
Common dolphinfish - Croatia FAO 37	0.0	0.0%
Common dolphinfish - New Zealand FAO 81	0.0	0.0%
Common dolphinfish - British Virgin Islands FAO 31	0.0	0.0%
Common dolphinfish - American Samoa FAO 77	0.0	0.0%
Common dolphinfish - Spain FAO 21	0.0	0.0%
Common dolphinfish - Portugal FAO 27	0.0	0.0%
<b>Total</b>	<b>120.3</b>	<b>100.0%</b>

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