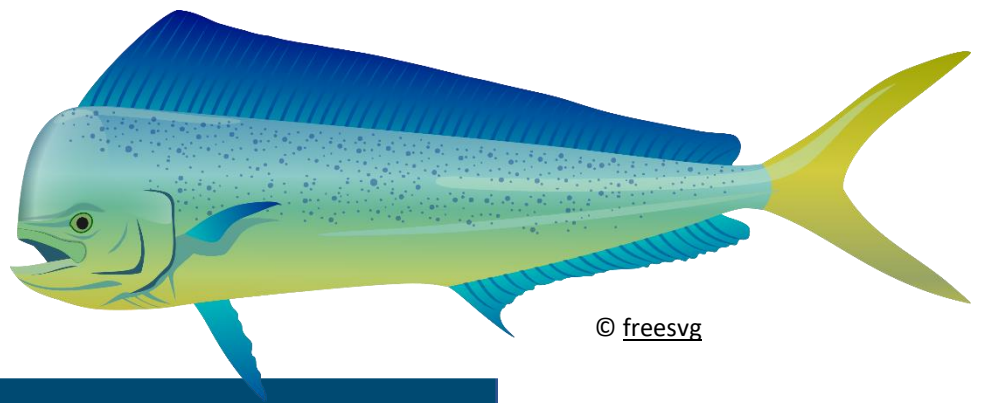




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MAHI-MAHI

A SUMMARY OF THE GLOBAL SITUATION IN
TERMS OF PRODUCTION, TRADE, AND
SUSTAINABILITY CHALLENGES



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MAHI-MAHI

A SUMMARY OF THE GLOBAL SITUATION IN TERMS OF PRODUCTION, TRADE, AND SUSTAINABILITY CHALLENGES

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SUMMARY

This report provides a concise overview of the current status and trends in mahi-mahi production, trade, and fisheries sustainability challenges. The analysis is based on publicly available data from sources such as FAO FishStatJ, UN COMTRADE, FishSource, and Seafood Watch. While the report is not exhaustive, it offers valuable insights into this commodity. The analysis involved a thorough examination of internet-accessible information, including international production and trade data. The collected information encompasses several key areas: fisheries data availability, fisheries production, fisheries trade, stock status, exploitation levels, management performance, and impacts on non-target species and the ecosystem.

The wild capture of mahi-mahi has steadily increased over the past three decades, from approximately 20,000 tonnes per year in the 1980s to around 120,000 tonnes at present. Global trade in mahi-mahi has also experienced significant growth, with the United States emerging as the largest importer of this seafood commodity. However, available trade information does not provide a complete picture of trade flows, mainly because it exhibits significantly lower granularity compared to other commodities. For most of the main exporters, mahi-mahi is generally reported under general categories such as "fish frozen nei," which includes other species like snappers or groupers. Recent trends suggest that global mahi-mahi catches are likely to stabilize at current levels or experience a slight increase. However, the stock status and exploitation levels of most mahi-mahi fisheries remain unknown.

For the three top producing countries (Peru, Indonesia, and Ecuador), the available data sources suggest the following: (1) Peru and Indonesia are increasingly playing a significant role in global mahi-mahi production and trade, now ranking as the first- and second-biggest producing countries; and (2) virtually all mahi-mahi exports from these three countries are destined for the United States.

While sustainability challenges in mahi-mahi fisheries were not extensively investigated in this report, available information indicates that, with a few exceptions, management has been deemed ineffective in controlling exploitation levels and adequately addressing and mitigating bycatch and impacts on non-target species, including protected species such as turtles, seabirds, and sharks. Additionally, there are no formal assessments in place yet across all global mahi-mahi fisheries, and the current stock status and fishing mortality rates are unknown for most mahi-mahi stocks. However, a recent bi-national stock assessment conducted by the research institutes in Ecuador and Peru suggests that the Eastern Pacific Ocean stock is not depleted, and overfishing is not occurring. Similarly, exploratory stock assessments conducted in the Western and Central Pacific Ocean indicate stocks are not depleted, and overfishing is unlikely to be occurring. Mahi-mahi is a transboundary species, often caught in fleets targeting other large pelagics such as tuna and swordfish, which are under the management authority of Regional Fisheries Management Organizations (RFMOs). However, management of mahi-mahi is not currently included under the management authority or mandate of any RFMO globally. This further adds to the complexity of managing global mahi-mahi fisheries across countries where harvest strategies are often not aligned.

Several fishery improvement projects (FIPs) have been implemented in some of the largest mahi-mahi fisheries, such as those in Ecuador, Peru, Costa Rica, Indonesia, and Taiwan, to address the aforementioned challenges.

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1 BACKGROUND AND STUDY OBJECTIVES

Mahi-mahi (*Coryphaena hippurus* Linnaeus, 1758), also known as dolphinfish, perico, or dorado, is a highly migratory large pelagic fish found in offshore tropical and subtropical waters worldwide, at depths ranging from 0 to 85 meters (Froese and Pauly, 2023).



Mahi mahi (*Coryphaena hippurus*)
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Global production and trade of mahi-mahi has steadily increased over the past three decades. (FAO, 2022a; FAO, 2023), but future catches are likely to stabilize at current levels or experience a slight increase. The stock status and exploitation levels of several mahi-mahi fisheries remain unknown. Consequently, there is a growing interest in this sector, not only in terms of production and trade but also regarding the management and broader environmental impacts associated with mahi-mahi fisheries.

This report summarizes the current status and trends in mahi-mahi production, trade, and fisheries sustainability. The analysis relies exclusively on publicly available data. It is important to note that the report does not aim to offer a comprehensive overview of the sector. For additional information on the sector, please refer to the original sources of data and information used, as well as other relevant literature (e.g., MBAq, 2023; SFP, 2023a; SFP, 2023c).

2 SCOPE OF THE ANALYSIS AND SOURCES USED

A comprehensive desktop analysis was conducted for mahi-mahi or dolphinfish (*Coryphaena hippurus* Linnaeus, 1758) on May 16-17, 2023. The analysis primarily relied on publicly available fisheries-related data obtained from the internet. International production data from reputable sources such as FAO FishStatJ (FAO, 2023) and Sea Around Us (Pauly et al., 2023), trade data from FAO FishStatJ and UN COMTRADE (accessed via the Panjiva platform: S&P Global, 2023b), and sustainability data from FishSource (SFP, 2023a) were predominantly used.

The collected information encompassed four key areas: (1) availability of fisheries data, (2) fisheries production, (3) fisheries trade, and, to a lesser degree (4) stock status, exploitation, and management performance. Descriptive statistics, tables, charts, and summaries of the major findings were developed based on the gathered data. While the report includes some charts and tables, the majority of summary statistics can be found in an Excel file provided as supplementary material. Although the research covers all countries, particular attention is given to the main countries in terms of production and trade.



Landing mahi-mahi catches from the Ecuadorian mahi-mahi fishery. © Teddy Escarabay

3 MAIN FINDINGS

3.1 Data availability and transparency

In terms of availability of production information, capture data for mahi-mahi is relatively abundant and accessible in the FAO datasets, covering most countries.

In contrast, trade data exhibits significantly lower granularity compared to other commodities, such as cod, and also compared to production data. The majority of mahi-mahi trade appears to be reported in conjunction with other fish species, such as snappers and groupers, under broad categories like “Marine fish, frozen, nei,” “Fish fillets, fresh or chilled, nei,” or “Miscellaneous pelagic fish, nei, frozen.” Notably, the global trade databases do not specifically report trade for mahi-mahi (or dolphinfish) for Peru and Indonesia, which are the two leading mahi-mahi-catching countries worldwide. This lack of granularity is also evident in the examined shipments from Indonesia, where quantities and values of shipments are frequently reported alongside other species, such as snapper, grouper, tuna, wahoo, and even octopus ([Table App. F- 1](#)) (S&P Global, 2023b). [Table 1](#) provides a list of the general commodity categories under which countries such as Indonesia likely report mahi-mahi.

To obtain comprehensive insights into the status and trends of bilateral mahi-mahi trade, it is essential to utilize additional data sources, including national trade statistics from key importers such as the United States, and from key exporters.

Table 1 | Examples of general commodity categories under which mahi-mahi exports are generally reported to global trade databases

ISSCAAP group name	FAO commodity description	FAO code	HS code
Marine fishes not identified	Marine fish, frozen, nei	034.2.5.9.90	303.89
	Marine fish, fresh or chilled, nei	034.1.5.9.90	302.89
	Fish meat, whether or not minced, frozen, nei	034.4.4.2.6.90	304.99
	Fish fillets, frozen, nei	034.4.1.6.90	304.89
	Fish fillets, fresh or chilled, nei	034.3.1.6.90	304.49
	Fish, fresh or chilled, nei	034.1.6.90	302.89
	Fish, frozen, nei	034.2.6.90	303.89
Miscellaneous pelagic fishes	Pelagic fish meat, whether or not minced, fresh or chilled, nei	034.3.2.2.5.7.90	304.59
	Miscellaneous pelagic fish meat, nei, frozen	034.4.4.2.5.7.90	304.99
	Miscellaneous pelagic fish, fillets, fresh or chilled, nei	034.3.1.5.7.90	304.49
	Miscellaneous pelagic fish, nei, fresh or chilled	034.1.5.7.90	302.89
	Miscellaneous pelagic fish, nei, frozen	034.2.5.7.90	303.89

3.2 Production: current status and recent trends

Despite its relatively low global production compared to other species such as tunas, mahi-mahi holds significant importance for certain small island countries or overseas territories in the Caribbean, including Guadeloupe and Dominica (**Figure 1**). Annual production in recent years has ranged from 100,000-120,000 tonnes, exclusively from wild capture (**FAO, 2023**). However, the actual total production is likely double the reported amount, estimated at approximately 240,000 tonnes per year. According to the Sea Around Us (SAU) database (**Pauly et al., 2023**), 50% of the total catch remains unreported (**Figure 4**).

The primary mahi-mahi-producing countries are Peru (42% of average annual production from 2019 to 2021), Indonesia (17%), Ecuador (11%), Iran (8%), Taiwan (6%), Pakistan (4%), and Costa Rica (2%). Together, these countries account for over 90% of global mahi-mahi production (**Figure 2**). According to the Sea Around Us database, around 51% of the total mahi-mahi catches are estimated to come from the industrial sector, compared to 42% from the artisanal sector. Among the different fishing gears, small-scale longlines make the largest contribution to total catches, representing 21% of the total, followed by purse seines at 20%. Catches from recreational (6%) and subsistence (1%) fisheries combined are estimated to contribute less than 10% to global mahi-mahi catches (**Figure App. E- 2**). The significance of each specific fleet segment and gear type varies between countries (**Pauly et al., 2023**).

Regarding production trends, mahi-mahi global catches can be divided into three main periods: (1) up until the 1980s, catches were relatively small and stable (below 20,000 tonnes per year); (2) from 1980 to 2015, annual production steadily increased, reaching 120,000 tonnes per year, driven by the development of fisheries in some Eastern Pacific countries (e.g., Peru, Ecuador, Costa Rica), Atlantic countries (e.g., Venezuela), and Indian Ocean countries (e.g., Pakistan, Iran); and (3) from 2015 to present, annual catches have been relatively stable, at around 100,000 tonnes.

This increasing trend in production was accompanied by a significant rise in the number of countries exploiting this resource, from just eight fishing countries reporting catches in 1950 to 63 in 2021 (**Figure 3**) (**FAO, 2023**). The increase in global mahi-mahi catches was mainly due to a significant rise in the production of top mahi-mahi capture countries such as Indonesia and Peru. According to statistics from the United Nations Food and Agriculture Organization (FAO), Peru began reporting catches for mahi-mahi in 1988, amounting to 600 tonnes, while current mahi-mahi catches total approximately 60,000 tonnes. A similar pattern is observed for Indonesia, which began reporting catches for mahi-mahi in 2004, amounting to 1,400 tonnes, compared to catches of around 18,000 tonnes presently. However, the actual catches are likely underestimated, due to significant levels of unreported catches for this species (**Pauly et al., 2023**).

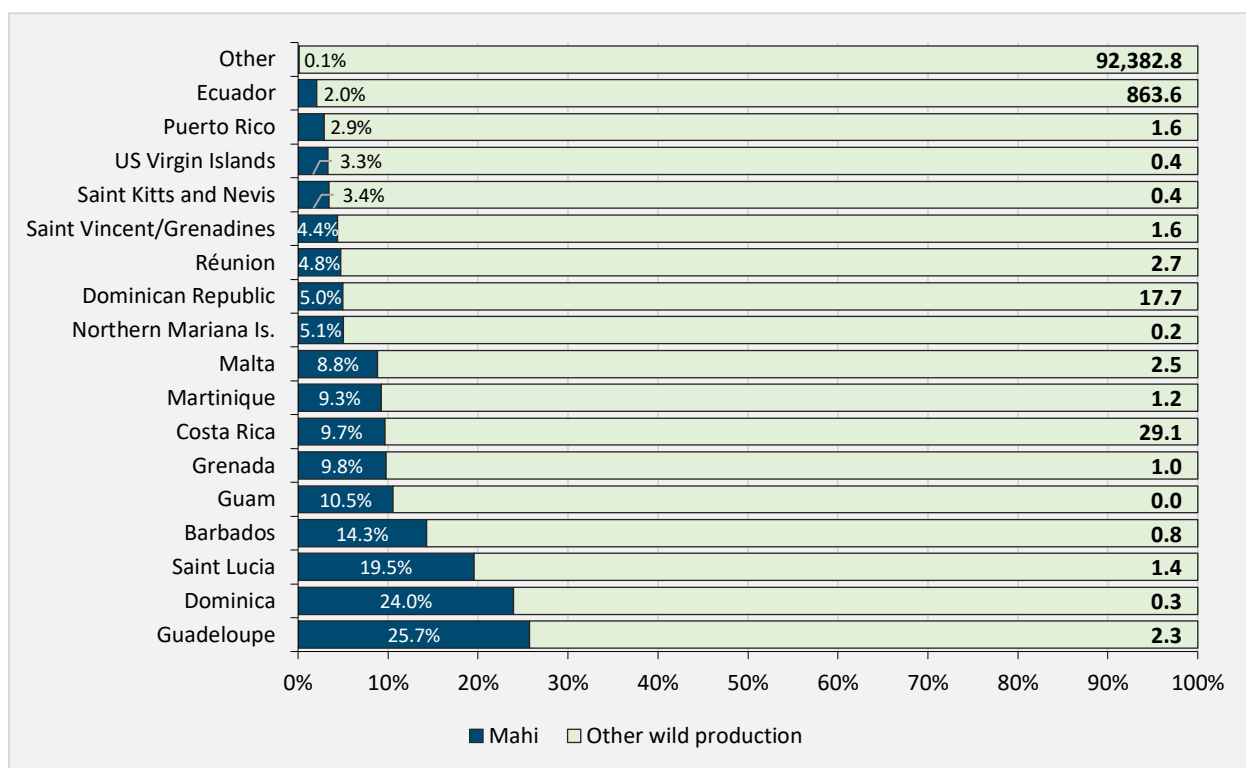


Figure 1 | Countries with the highest proportion of mahi-mahi catches (blue segment) as a percentage of their total wild catches ('000 t) in 2021 (blue and green segments combined). Values displayed on the right of the chart represent each country's remaining catches for that year, including mahi-mahi. Source: FAO, 2023a.

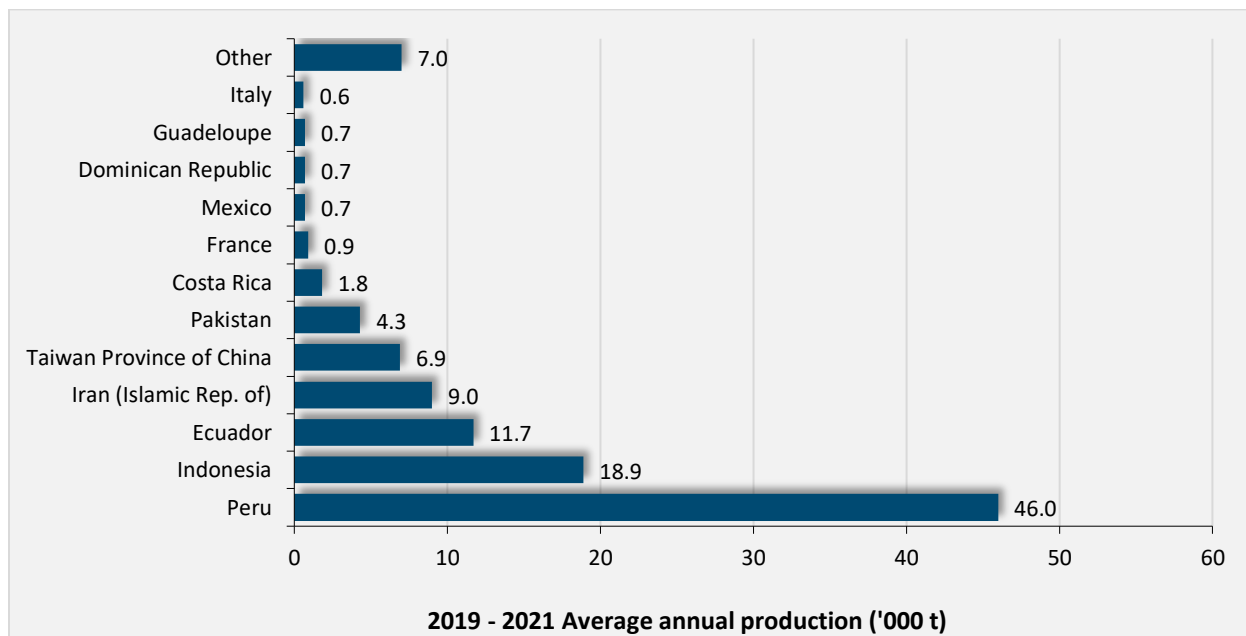


Figure 2 | Average annual mahi-mahi (*Coryphaena hippurus*) production for the main producing countries, 2019-2021. Source: FAO, 2023a

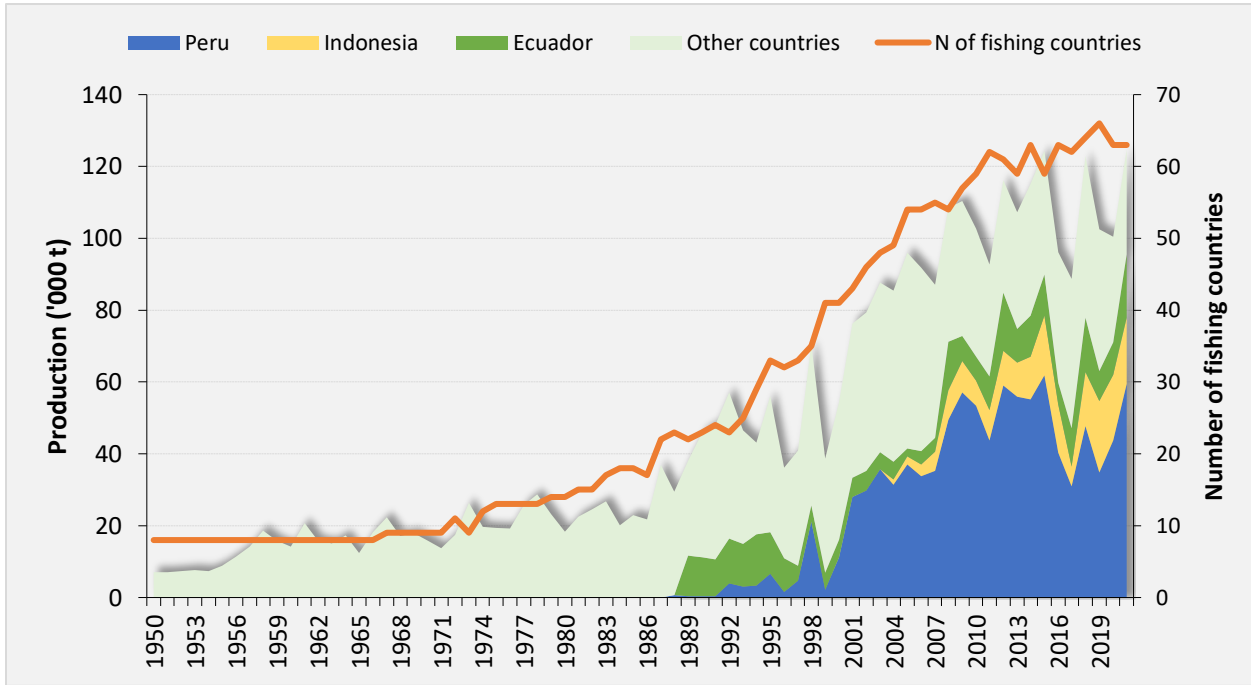


Figure 3 | Number of fishing countries reporting mahi-mahi catches (orange line), and reported global mahi-mahi production ('000 t) by main fishing country (Peru, blue; Indonesia, yellow; Ecuador, dark green) and remaining production (light green), from 1950 to 2021. Source: FAO, 2023a

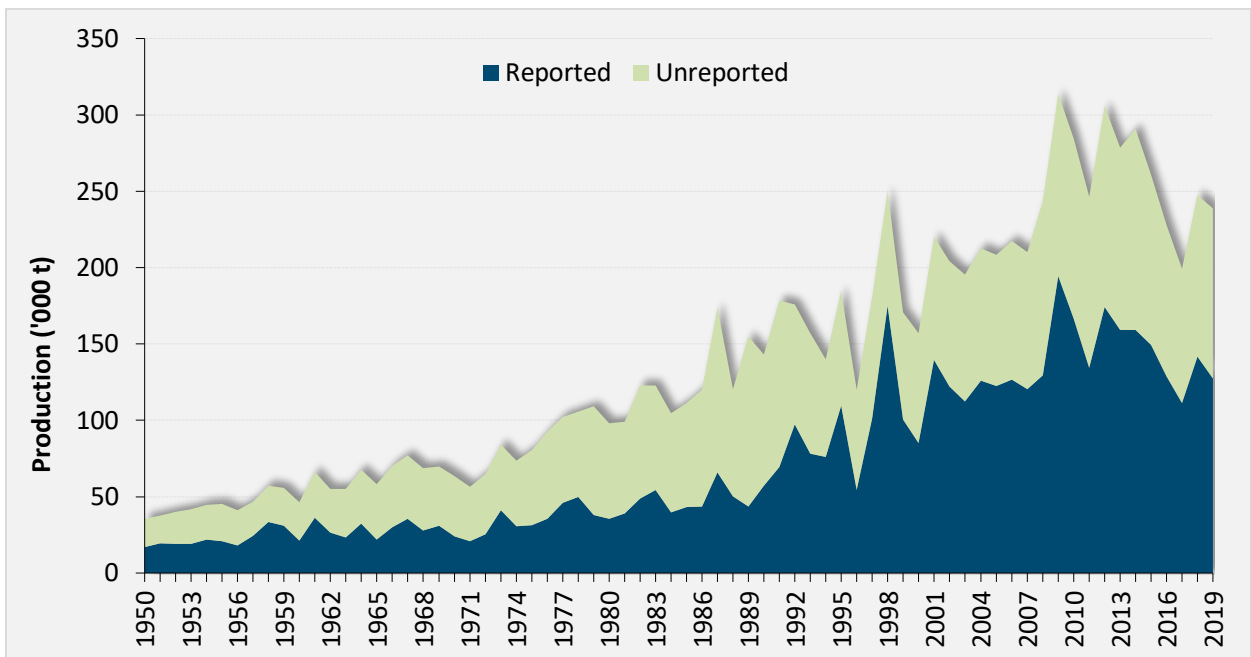


Figure 4 | Estimated reported (blue) and unreported (light green) global production of mahi-mahi ('000 t) from 1950 to 2019. Source: Sea Around Us (Pauly et al., 2023)

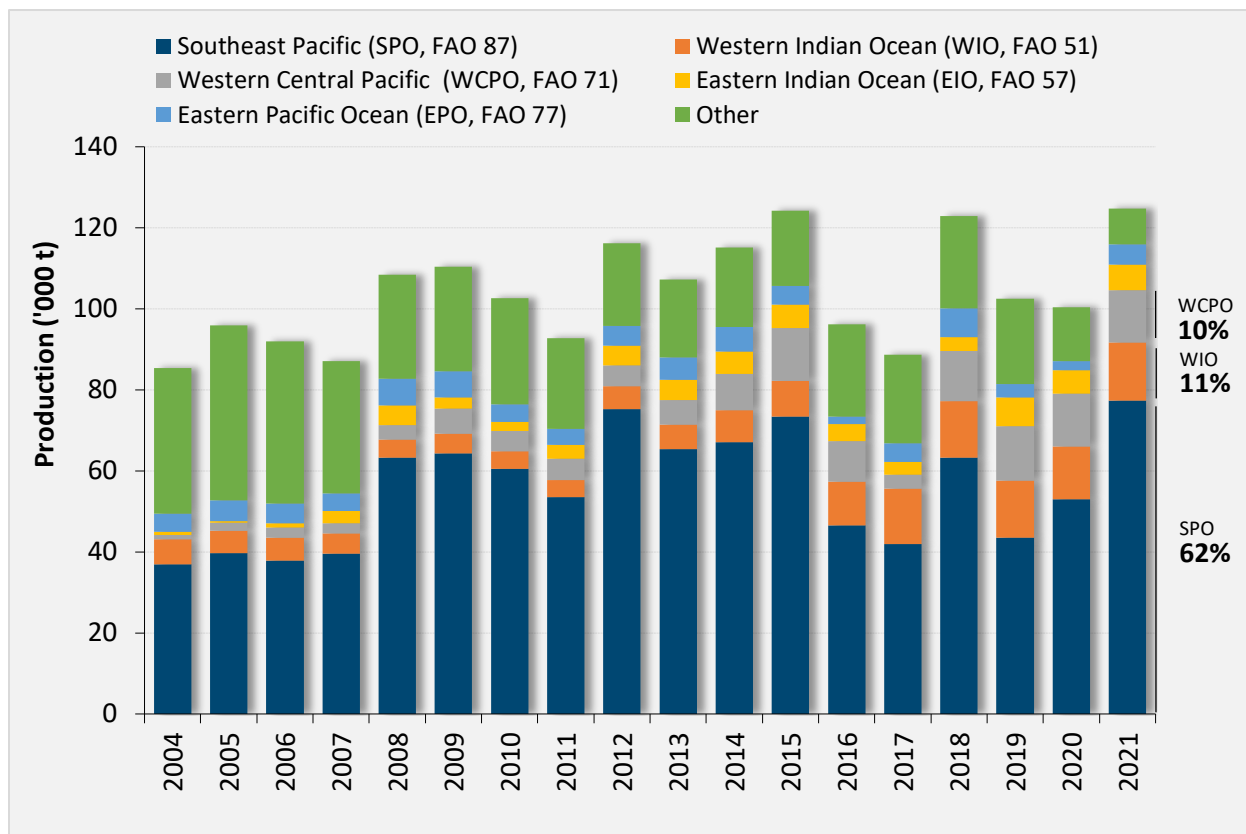


Figure 5 | Reported mahi-mahi production between 2004 and 2021, and percentage of total 2021 production by main FAO major fishing area. Source: FAO, 2023a.

3.3 International trade and key exporters/importers of mahi-mahi

Mahi-mahi has become an increasingly significant commodity in certain seafood markets, particularly the United States. Unlike other seafood commodities, international trade in mahi-mahi has gained relevance only in recent years. Prior to 1990, there were no reported imports of mahi-mahi, and from 1990 to 2009, the reported trade volume remained relatively low. However, in 2010, global imports of mahi-mahi experienced a significant increase compared to previous years, reaching approximately 3,000 tonnes (valued at USD 21 million). This upward trend continued until 2015 and has since stabilized (**Figure 6**) (FAO, 2022a).

According to bilateral trade data from the UN Food and Agriculture Organization (FAO), the United States is by far the largest importer of mahi-mahi, accounting for 91% of global imports by quantity and 99% by value (**Figure 7**, **Figure 8**) (FAO, 2022b). This finding is supported by national statistics from key exporters such as Ecuador, Peru, and Indonesia. For instance, 80-90% of Indonesia's mahi-mahi exports are destined for the United States (**Table App. F-1**). Ecuador also serves as a minor importer of mahi-mahi by quantity, likely re-exporting the imported fish to other markets. In the case of the Dominican Republic, imported mahi-mahi is likely destined for the foodservice sector, such as hotels.

In terms of global exporters, there is a discrepancy in the data depending on the data source. According to the FAO data, the main exporters of mahi-mahi are Ecuador, Panama, Costa Rica, and Peru. However,

this data only considers the quantity and value specifically reported as mahi-mahi (or dolphinfish). Since many countries report mahi-mahi trade to the FAO and UN COMTRADE under more general categories, such trade is not reflected in **Figure 7** and **Figure 8**, particularly for top producing countries such as Peru or Indonesia. The discrepancy in the reported data for mahi-mahi, resulting from the varying levels of granularity at which the data is reported by each country, is also evident within the FAO trade database when comparing reported global mahi-mahi exports to more detailed exports data (**Figure App. E- 3**).

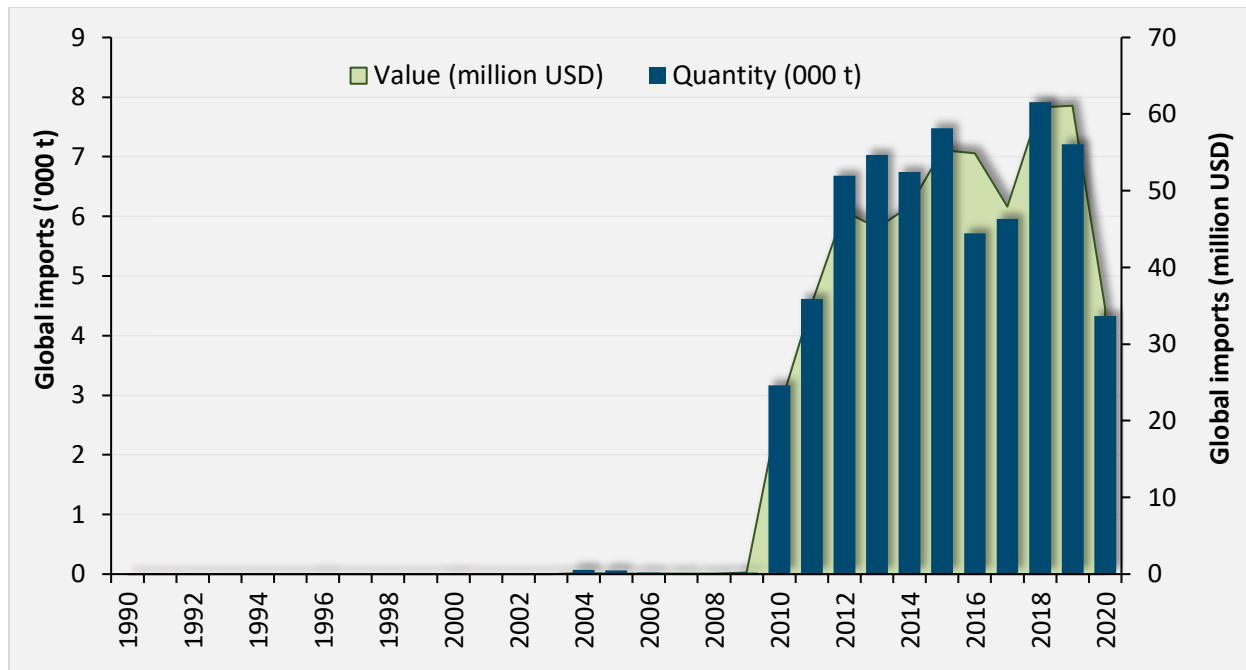


Figure 6 | Reported global mahi-mahi imports by value (million USD) and quantity ('000 t), from 1990 to 2020. Source: FAO, 2022a

Despite the existing discrepancies and limited availability of detailed trade data for mahi-mahi exports, the importance of the United States as the main end market, and of top exporting countries such as Peru, Ecuador, Indonesia and Taiwan, is evident in other available trade data sources, such as the US Foreign trade database (NMFS 2023). According to national trade statistics from the United States, which is estimated to account for 80-90% of global mahi-mahi imports, the main exporting countries by quantity are Peru (33%), Ecuador (28%), Viet Nam (10%), Taiwan (9%), Panama (4%), Costa Rica (4%), and Indonesia (4%). When combined, these seven countries accounted for 92% of the total mahi-mahi imports by quantity and 93% by value in the United States in 2021 (**Table App. F- 3**) (NMFS, 2023). The same pattern is observed for 2022 (**Table App. F- 2**) (S&P Global, 2023b). Exports of this commodity by these and other key countries are likely even higher but might be reported by the United States under the more general seafood commodity categories mentioned earlier.

Exporter/Importer	United States	Ecuador	Dominican Republic	Antigua and Barbuda	Total
Ecuador	100%	0%	0%	0%	48%
Panama	98%	1%	1%	0%	17%
Costa Rica	100%	0%	0%	0%	9%
Nicaragua	100%	0%	0%	0%	4%
Peru	33%	67%	0%	0%	4%
Other nei	0%	100%	0%	0%	4%
Guatemala	100%	0%	0%	0%	2%
Brazil	99%	1%	0%	0%	2%
Venezuela	90%	10%	0%	0%	2%
Taiwan	100%	0%	0%	0%	1%
Fiji	100%	0%	0%	0%	1%
El Salvador	100%	0%	0%	0%	1%
China	0%	0%	100%	0%	1%
Tonga	100%	0%	0%	0%	1%
India	0%	0%	100%	0%	1%
Mexico	100%	0%	0%	0%	0%
Other	100%	0%	0%	0%	0%
Total	91%	7%	2%	0%	

Figure 7 | The main mahi-mahi exporters and their top trade partners, by percentage of each country's total exports by quantity (2019/20 average). Source: FAO, 2022b. **Note:** Based on imports (mirror) data, only including trade data labelled as "dolphinfish."

Exporter / Importer	United States	Dominican Republic	Ecuador	Antigua and Barbuda	Total
Ecuador	100%	0%	0%	0%	47%
Panama	100%	0%	0%	0%	19%
Costa Rica	100%	0%	0%	0%	11%
Nicaragua	100%	0%	0%	0%	5%
Brazil	100%	0%	0%	0%	3%
Guatemala	100%	0%	0%	0%	2%
Venezuela	100%	0%	0%	0%	2%
Taiwan	100%	0%	0%	0%	2%
Fiji	100%	0%	0%	0%	2%
El Salvador	100%	0%	0%	0%	2%
Peru	94%	0%	6%	0%	2%
Tonga	100%	0%	0%	0%	1%
Japan	100%	0%	0%	0%	1%
Mexico	100%	0%	0%	0%	0%
China	0%	100%	0%	0%	0%
Dominican Republic	100%	0%	0%	0%	0%
Other	100%	0%	0%	0%	0%
Total	99%	1%	0%	0%	

Figure 8 | The main mahi-mahi exporters and their top trade partners, by percentage of each country's total exports by value (2019/20 average). Source: FAO, 2022b. **Note:** Based on imports (mirror) data, only including trade data labelled as "dolphinfish."

3.4 Sustainability challenges

As mentioned above, the current report does not extensively address the sustainability challenges within mahi-mahi fisheries. However, this section offers a brief summary of the management quality, stock status, and environmental impacts of mahi-mahi fisheries on a global scale, based on two primary sources: [FishSource](#) (SFP, 2023a) and [Seafood Watch](#) (MBAq, 2023).

The FishSource database (SFP 2023a) currently covers 51 mahi-mahi fisheries, primarily located in South and Central America, North America, Asia, Europe, and Africa (Table App. F- 4). For the fisheries with available FishSource scores, the data indicates that the primary key issues are the absence of or ineffective management, and inadequate monitoring, surveillance, and compliance. This leads to a risk of illegal, unreported, and unregulated (IUU) fishing, which may be attributed to the informality of some fleets engaged in mahi-mahi fishing. As mentioned previously, mahi-mahi is a transboundary species throughout the oceans they inhabit and currently there is not a mandate under any of the global RFMOs to manage mahi-mahi as there is with other large pelagic species. This lack of regional coordination has resulted in limited fisheries-dependent and independent data on stock structure and exploitation status, and individual country management measures and harvest strategies that do not align, adding further challenges to managing a highly migratory species such as mahi-mahi.

Another significant issue for mahi-mahi fisheries globally is that fisheries targeting mahi-mahi have some degree of bycatch. Bycatch includes other economically important species as well as endangered, threatened, and protected (ETP) species. Mitigation, reduction, and monitoring of interactions and mortality of these species is lacking in global mahi-mahi fisheries and remains one of the key issues to be addressed in this fishery.

There are currently 26 recommendations covering mahi-mahi fisheries in Seafood Watch (SFW), representing the four main mahi-mahi stocks (Atlantic Ocean, Eastern Pacific Ocean, Indian Ocean, and Western and Central Pacific Ocean) and most of the main fishing countries and gears (MBAq, 2023). The latest recommendations can be found in Table App. F- 5, along with the respective sub-scores for each of the four criteria considered. Similar to FishSource, the various SFW recommendations on mahi-mahi suggest the following: (1) For most of the mahi-mahi stocks, there are no formal assessments, and the current stock status and fishing mortality rates are unknown. For the Eastern Pacific Ocean and Western and Central Pacific Ocean, exploratory assessments suggest that the stocks are not depleted, and overfishing is unlikely to be occurring. (2) Overall, except for fisheries in United States waters, management is deemed ineffective in controlling exploitation levels and adequately addressing and mitigating bycatch and impacts on non-target species, including protected species such as turtles, seabirds, and sharks. (3) Given that these are mostly offshore fisheries where pelagic gear is used (e.g., drifting longlines, purse seines), impacts on the seafloor and benthic habitats are negligible or non-existent.

Currently, several fishery improvement projects (FIPs) are under implementation in some of the largest mahi-mahi fisheries, such as those in Ecuador, Peru, Indonesia, and Taiwan, to address the aforementioned challenges. For more detailed information, please refer to Table App. F- 6.

Some FIPs in the Eastern Pacific Ocean have been active for many years, and their progress has been slow. New FIPs in mahi-mahi fisheries should integrate lessons learned from the aforementioned longstanding improvement initiatives in the EPO to ensure adequate impact. In light of the transboundary nature of this species, a regional collaboration of producers and processors from Peru

and Ecuador called [COREMAHI](#) (Comité Regional de Productores y Procesadores de Mahi) was created to address improvement needs that require a regional approach and cannot be tackled by individual FIPs in isolation.

Despite the early interest of U.S. retailers in promoting improvements in mahi-mahi fisheries, more commitment from buyers is needed to ensure enough market support is available to accelerate improvements in sustainability performance of mahi-mahi fisheries.



Mahi Mahi (*Coryphaena hippurus*) caught on longline
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5 SUPPORTING TABLES AND FIGURES

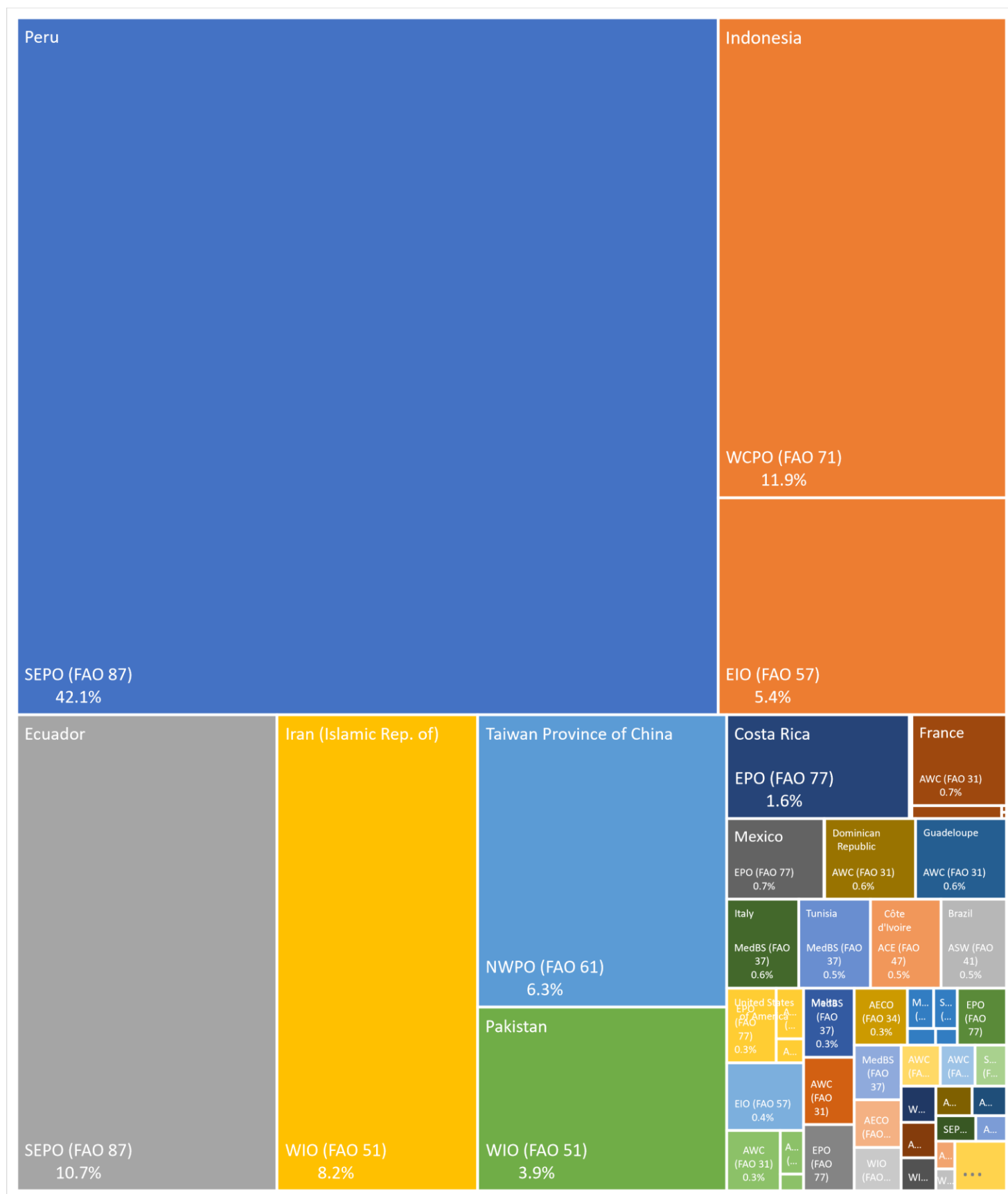


Figure App. E- 1 | Annual average percentage of total mahi-mahi production per flag country and FAO major fishing area, 2019-21.
Source: FAO, 2023a

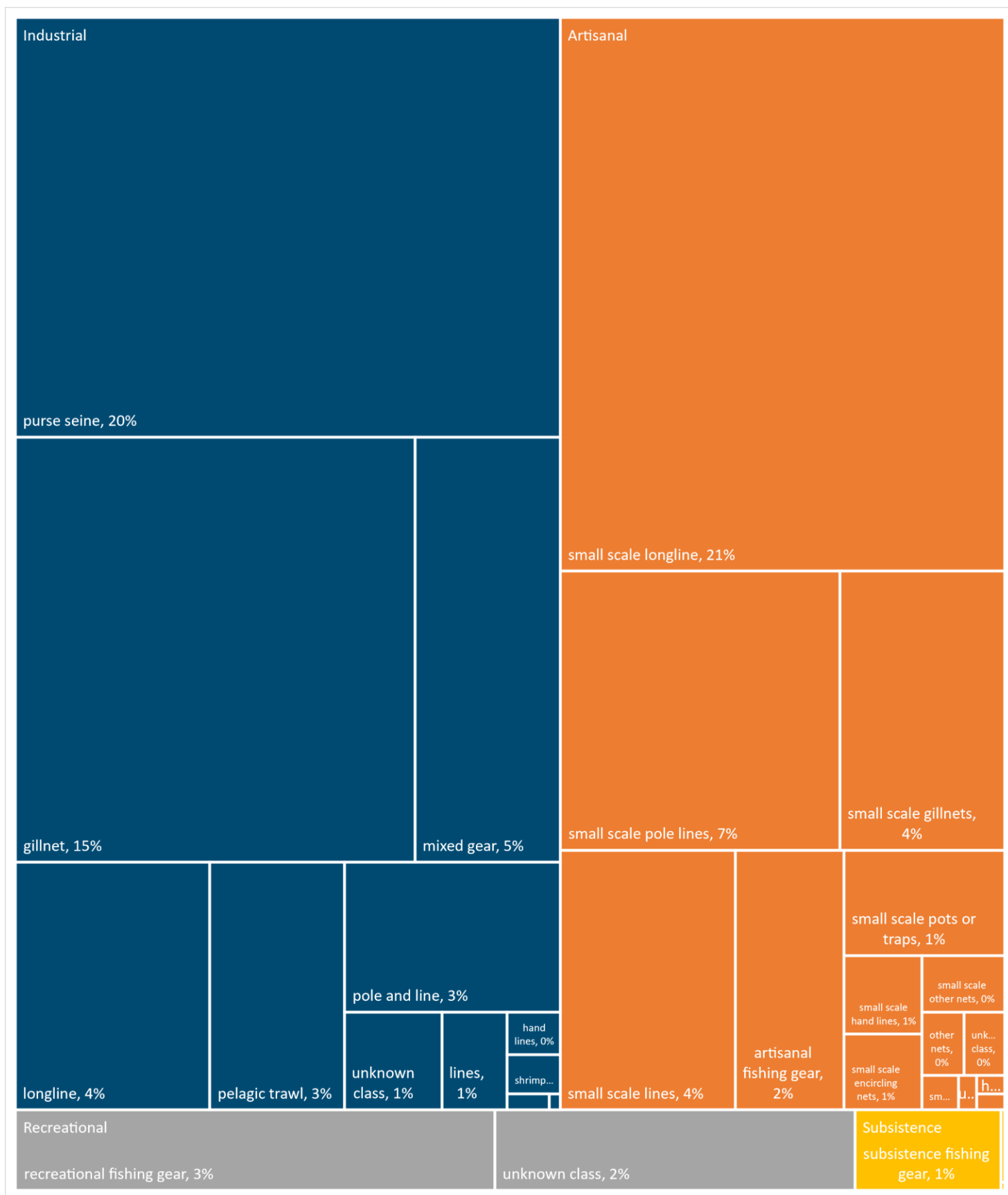


Figure App. E- 2 | Estimated percentage of total mahi-mahi production per fishing sector and fishing gear, 2019. Source: Pauly et al., 2023

Table App. F- 1 | Indonesia's reported shipments (in weight (t) and number) containing mahi-mahi by each destination country, between 2018 and 2023. The shipments are divided by those that contained mahi-mahi only and those containing other seafood species. Source: S&P Global, 2023a.

Importing country	Mahi-mahi only		Mahi-mahi and other marine species		Total shipment weight (t)	Species mahi-mahi is mostly exported with
	Shipment weight (t)	Number of shipments	Shipment weight (t)	Number of shipments		
United States	1,498.3	72	2,412.9	113	3,911.1	Snapper, Grouper, Tuna, Octopus, Kingfish, Swordfish, Cobia
Puerto Rico	0.0	-	296.5	13	296.5	Snapper, Grouper, Tuna, Octopus, Kingfish
Indonesia	225.9	13	12.2	1	238.1	
Ecuador	101.6	5	0.0		101.6	
Canada	25.9	1	0.0		25.9	
Sri Lanka	0.0	1	19.4	1	19.4	Mackerel
Trinidad and Tobago	18.5	1	0.0		18.5	
Bermuda	0.0		14.3	1	14.3	Tuna, wahoo
Vietnam	0.0	15	0.0		0.0	
Total	1,870.1	108	2,755.3	129	4,625.4	

Table App. F- 2 | Total imports of mahi-mahi into the United States, by quantity (metric tons) between 2012 and 2022, and main trade partners. Source: S&P Global, 2023b.

Country	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	% of 2022 total	Change in market share (2012 to 2022)
Peru	7,131	5,052	5,582	8,153	7,733	5,369	7,311	4,380	6,414	8,545	9,927	33.3%	+4.9%
Ecuador	7,790	7,503	7,028	8,082	4,489	3,965	5,949	5,883	6,285	7,449	8,871	29.7%	-1.2%
Vietnam	790	278	567	468	864	2,166	1,695	997	925	2,659	2,190	7.3%	+4.2%
Costa Rica	1,257	1,523	1,944	793	193	750	1,855	994	342	1,093	1,770	5.9%	+0.9%
Taiwan	3,262	2,947	5,813	4,643	4,926	5,204	1,872	2,293	2,780	2,327	1,720	5.8%	-7.2%
Panama	1,126	1,048	1,596	1,279	491	1,309	1,515	1,439	1,025	1,169	1,305	4.4%	-0.1%
Nicaragua	301	623	722	197	2	401	943	563	181	527	1,213	4.1%	+2.9%
Guatemala	1,637	1,451	1,272	396	15	495	1,641	200	91	600	1,083	3.6%	-2.9%
Indonesia	343	51	725	598	560	556	472	525	870	1,018	881	3.0%	+1.6%
El Salvador	323	144	33	37	5	277	337	109	42	216	239	0.8%	-0.5%
Oman	0	0	0	0	0	63	75	23	63	32	146	0.5%	+0.5%
Mexico	438	676	323	108	21	157	350	38	9	54	94	0.3%	-1.4%
Brazil	6	4	5	385	1,052	306	76	74	195	142	74	0.2%	+0.2%
China	271	32	307	129	155	88	58	0	0	17	66	0.2%	-0.9%
Malaysia	10	0	10	57	39	93	173	64	47	130	62	0.2%	+0.2%
Venezuela	0	0	3	4	22	195	134	125	91	116	48	0.2%	+0.2%
Tonga	1	10	46	57	61	58	38	69	4	0	47	0.2%	+0.2%
Dominican Republic	6	7	6	9	7	5	14	15	7	10	20	0.1%	+0.0%
India	3	0	0	13	14	559	888	134	0	21	14	0.0%	+0.0%
French Polynesia	11	36	94	11	10	20	1	3	6	0	14	0.0%	+0.0%
Philippines	24	9	21	4	8	46	19	0	0	18	13	0.0%	-0.1%
Guyana	0	0	0	0	0	4	3	16	1	0	11	0.0%	+0.0%
Other	433	394	380	689	728	764	487	380	88	82	47	0.2%	

Note: Includes only reported imports for the following harmonized systems commodity codes: “Fish and crustaceans, molluscs and other aquatic invertebrates: Fish, fresh or chilled, excluding fish fillets and other fish meat of heading 0304: Other fish, excluding edible fish offal of subheadings 0302.91 to 0302.99: Other: Other Dolphin fish (mahi mahi) (*Coryphaena* spp.)” and “Fish and crustaceans, molluscs and other aquatic invertebrates: Fish fillets and other fish meat (whether or not minced), fresh, chilled or frozen: Frozen fillets of other fish: Other: Other Dolphin (Mahi mahi) (*Coryphaena* spp.)”

Table App. F- 3 | 2021 United States reported imports of mahi-mahi (or dolphinfish) by exporter country, in terms of quantity (t) and value (thousand USD). Source: NMFS, 2023

Country	Quantity (tonnes)	Value (1000 USD)	% of total (quantity)
Peru	8,545	86,625	33%
Ecuador	7,449	78,799	28%
Viet Nam	2,650	20,576	10%
Taiwan	2,327	26,182	9%
Panama	1,169	11,342	4%
Costa Rica	1,093	9,604	4%
Indonesia	1,018	7,315	4%
Guatemala	600	5,388	2%
Nicaragua	527	5,027	2%
El Salvador	216	1,709	1%
Brazil	142	1,240	1%
Malaysia	130	945	0%
Venezuela	116	1,121	0%
Mexico	54	384	0%
Oman	32	170	0%
Mozambique	31	236	0%
Japan	23	171	0%
India	21	99	0%
Philippines	18	112	0%
China	17	88	0%
Thailand	16	160	0%
Dominican Republic	10	109	0%
Singapore	6	60	0%
Suriname	3	26	0%
Mauritius	1	11	0%
Belize	1	7	0%
Fiji	0	5	0%
Canada	0	5	0%
Senegal	0	3	0%
French Polynesia	0	3	0%
Total	26,218	257,521	

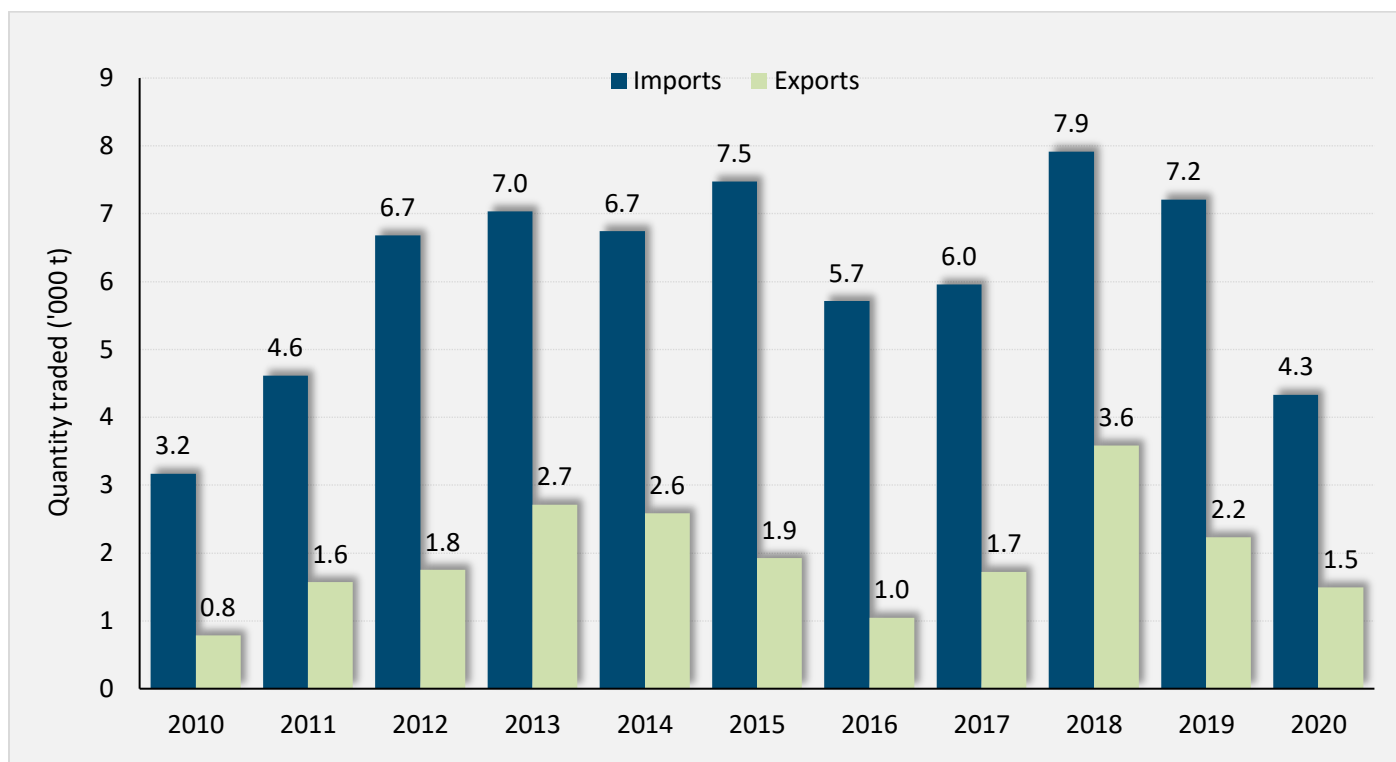


Figure App. E- 3 | FAO reported global imports (blue bars) and exports (green bars) of mahi-mahi¹ between 2010 and 2020

¹ Commodity name “Dolphinfishes, fresh or chilled” and “Dolphinfishes, frozen”

Table App. F- 4 | FishSource profiles and the respective Management Quality and Stock Health FishSource scores for the mahi-mahi (*Coryphaena hippurus*) stocks currently covered in FishSource. (Source: SFP, 2023)

Stock name	Flag country	Gear name	Management Quality			Stock Health		
			Management strategy	Managers' compliance	Fishers' compliance	Current health	Future health	
Common dolphinfish - Atlantic	Brazil	Longlines	<6	≥6	<6	Not scored	Not scored	
	Spain	Longlines	<6	≥6	<6	Not scored	Not scored	
	United States	Drifting longlines	<6	≥6	<6	Not scored	Not scored	
		Hooks and lines	<6	≥6	<6	Not scored	Not scored	
		Pole-lines hand operated	<6	≥6	<6	Not scored	Not scored	
		Pole-lines mechanized	<6	≥6	<6	Not scored	Not scored	
Common dolphinfish - Eastern Pacific Ocean	Costa Rica	Drifting longlines	≥6	≥6	≥6	DD	DD	
		Hooks and lines	≥6	≥6	≥6	DD	DD	
		Mechanized lines	≥6	≥6	≥6	DD	DD	
		Pole-lines hand operated	≥6	≥6	≥6	DD	DD	
	Ecuador	Associated purse seining	≥6	≥6	DD	DD	DD	
		Drifting longlines	≥6	≥6	DD	DD	DD	
		Handlines hand operated	≥6	≥6	DD	DD	DD	
		Mechanized lines	≥6	≥6	DD	DD	DD	
		Pole-lines hand operated	≥6	≥6	DD	DD	DD	
	Guatemala	Drifting longlines	<6	≥6	<6	DD	DD	
	Nicaragua	Drifting longlines	<6	≥6	<6	DD	DD	
		Mechanized lines	<6	≥6	≥6	DD	DD	
		Pole-lines hand operated	<6	≥6	≥6	DD	DD	
	Panama	Drifting longlines	<6	≥6	<6	DD	DD	
		Longlines	<6	≥6	<6	DD	DD	
		Mechanized lines	<6	≥6	≥6	DD	DD	
		Pole-lines hand operated	<6	≥6	≥6	DD	DD	
	Peru	Drifting longlines	≥6	10	2.9	≥8	≥6	
	Common dolphinfish - Indian Ocean	Comoros	Longlines	<6	<6	<6	DD	DD
		France	Longlines	<6	<6	<6	DD	DD
Indonesia		Drifting longlines	<6	<6	<6	DD	DD	
		Pole-lines hand operated	<6	<6	<6	DD	DD	

Stock name	Flag country	Gear name	Management Quality			Stock Health	
			Management strategy	Managers' compliance	Fishers' compliance	Current health	Future health
		Set longlines	<6	<6	<6	DD	DD
	Iran	Longlines	<6	<6	<6	DD	DD
	Kenya	Longlines	<6	<6	<6	DD	DD
	Maldives	Longlines	<6	<6	<6	DD	DD
	Mauritius	Longlines	<6	<6	<6	DD	DD
	Mozambique	Longlines	<6	<6	<6	DD	DD
	Pakistan	Longlines	<6	<6	<6	DD	DD
	Réunion	Longlines	<6	<6	<6	DD	DD
	South Africa	Longlines	<6	<6	<6	DD	DD
	Spain	Longlines	<6	<6	<6	DD	DD
	Sri Lanka	Handlines hand operated	<6	<6	<6	DD	DD
		Longlines	<6	<6	<6	DD	DD
	United Kingdom	Longlines	<6	<6	<6	DD	DD
	Common dolphinfish - Western and Central Pacific Ocean	Australia	Set longlines	<6	<6	DD	DD
Indonesia		Drifting longlines	<6	<6	≥6	DD	DD
		Handlines hand operated	<6	<6	≥6	DD	DD
		Purse seines	<6	<6	<6	DD	DD
Taiwan		Drifting longlines	<6	<6	DD	DD	DD
		Trolling lines	<6	<6	DD	DD	DD
United States		Longlines	<6	<6	DD	DD	DD
Viet Nam		Dolphin set purse seining	<6	<6	DD	DD	DD
		Drifting longlines	<6	<6	DD	DD	DD
		Handlines hand operated	<6	<6	DD	DD	DD

Table App. F- 5 | Current recommendations (overall recommendation and score per criteria), for the mahi-mahi (*Coryphaena hippurus*) evaluations currently covered in Seafood Watch (Source: MBAq, 2023).

Stock	Flag country	Fishing gear	Body of water	Other fishery details	Recommendation (Overall score) ^(1,2)	Impacts on the Species Under Assessment	Impacts on Other Capture Species	Impacts on the Habitat and Ecosystem	Management Effectiveness	Year ⁽³⁾	Reference(s)
Common dolphinfish - Atlantic	Other countries	Drifting longlines	Southeast Atlantic Ocean	NA	Avoid (1.700)	2.644	1	3.162	1	2021	MBAq (2021a)
			Northeast Atlantic Ocean	NA	Avoid (1.700)	2.644	1	3.162	1		
			Northwest Atlantic Ocean	NA	Avoid (1.700)	2.644	1	3.162	1		
			Southwest Atlantic Ocean	NA	Avoid (1.700)	2.644	1	3.162	1		
		Floating object purse seine (FAD)	Northeast Atlantic Ocean, Southeast Atlantic Ocean	NA	Avoid (1.789)	2.644	1	3.873	1		
			Northwest Atlantic Ocean, Southwest Atlantic Ocean	NA	Avoid (1.789)	2.644	1	3.873	1		
	United States	Drifting longlines	Gulf of Mexico	United States-flagged vessels fishing in US waters and the High Seas	Good alternative (2.354)	2.644	1	3.873	3		
Atlantic Ocean and adjacent areas			United States-flagged vessels fishing in US waters and the High Seas	Good alternative (2.354)	2.644	1	3.873	3			
Handlines and hand-operated pole-and-lines		Northeast Atlantic Ocean, Northwest Atlantic Ocean	United States-flagged vessels fishing in US waters and the High Seas	Best choice (3.411)	2.644	2.644	3.873	5			
Common dolphinfish - Eastern Pacific Ocean	Costa Rica	Drifting longlines	Eastern Central Pacific Ocean	NA	Avoid (1.789)	2.644	1	3.873	1	2021	MBAq (2021b)
	Ecuador	Drifting longlines	Southeast Pacific Ocean	NA	Avoid (1.907)	3.413	1	3.873	1	2021	MBAq (2021c)
	Guatemala	Drifting longlines	Eastern Central Pacific Ocean	NA	Avoid (1.789)	2.644	1	3.873	1	2021	MBAq (2021d)

Stock	Flag country	Fishing gear	Body of water	Other fishery details	Recommendation (Overall score) (1,2)	Impacts on the Species Under Assessment	Impacts on Other Capture Species	Impacts on the Habitat and Ecosystem	Management Effectiveness	Year (3)	Reference(s)
Other countries		Drifting longlines	Eastern Central Pacific Ocean, Northeast Pacific Ocean	NA	Avoid (1.789)	2.644	1	3.873	1	2021	MBAq (2021e)
			Eastern Central Pacific Ocean, Southeast Pacific Ocean	NA	Avoid (1.907)	3.413	1	3.873	1		
		Floating object purse seine (FAD)	Eastern Central Pacific Ocean	NA	Avoid (1.700)	2.644	1	3.162	1		
		Unassociated purse seine (non-FAD)	Eastern Central Pacific Ocean	NA	Good alternative (2.354)	2.644	1	3.873	3		
Panama		Drifting longlines	Eastern Central Pacific Ocean	NA	Avoid (1.789)	2.644	1	3.873	1	2021	MBAq (2021f)
United States (Hawaii)		Handlines and hand-operated pole-and-lines	Eastern Central Pacific Ocean	NA	Good alternative (3.002)	2.644	2.644	3.873	3	2021	MBAq (2021g)
		Longline (deep-set)	Eastern Central Pacific Ocean, Northeast Pacific Ocean	Covers US vessels landing in Hawaii or California	Good alternative (2.354)	2.644	1	3.873	3		
		Longline (shallow-set)	Eastern Central Pacific Ocean	NA	Good alternative (2.701)	2.644	1.732	3.873	3		
		Trolling lines	Eastern Central Pacific Ocean	NA	Good alternative (3.002)	2.644	2.644	3.873	3		
Common dolphinfish - Indian Ocean	Indonesia	Drifting longlines	Eastern Indian Ocean	NA	Avoid (1.893)	3.318	1	3.873	1	2022	MBAq (2022)
Common dolphinfish - Western and Central Pacific Ocean	Indonesia	Drifting longlines	Western Central Pacific Ocean	NA	Avoid (1.893)	3.318	1	3.873	1		
	Taiwan	Drifting longlines	Western Central Pacific Ocean	NA	Avoid (2.018)	4.284	1	3.873	1		
	United States (Hawaii)	Longline (deep-set)	Western Central Pacific Ocean, Northwest Pacific Ocean	NA	Good alternative (2.354)	2.644	1	3.873	3	2021	MBAq (2021g)
		Longline (shallow-set)	Western Central Pacific Ocean, Northwest Pacific Ocean	NA	Good alternative (2.701)	2.644	1.732	3.873	3		

Notes: (1) Ratings for the overall recommendation and each of the criterion range from zero to five, where zero indicates very poor performance and five indicates the fishing operations have no significant impact. (2) For more information on the scoring criteria or the specific evaluations, please consult the [Seafood Watch website](#) and the respective evaluation reports. (3) Year of the latest evaluation and respective report.

Table App. F- 6 | List of currently (as of July 2023) active and prospective fishery improvement projects (FIPs) that cover fisheries capturing mahi-mahi. Source: FishSource (SFP 2023)

FIP name	Year FIP start	FIP status	FIP project type	Progress rating	Stage
Costa Rica large pelagics - longline and green stick	2019	Active	Comprehensive	A	4
Eastern Pacific large pelagics - longline (Martec)	2020	Active	Comprehensive	A	5
Ecuador mahi-mahi - longline ¹	2009	Active	Comprehensive	C	5
Ecuador mahi-mahi - longline (ASOAMAN)	2021	Active	Basic	C	3
Guatemala Pacific mahi-mahi and yellowfin tuna - longline	NA	Prospecti	NA	NA	NA
Indonesia Indian Ocean and Western Central Pacific Ocean wahoo, cobia, and mahi-mahi - longline	2021	Active	Basic	D	3
Panama large pelagics - longline (Marpesca)	2020	Active	Comprehensive	D	3
Peru mahi-mahi - longline (WWF)	2012	Active	Comprehensive	C	4
Taiwan Hsin-Kang mahi-mahi - longline	2015	Active	Basic	B	4

Notes: (1) The fishery covered by this FIP is currently under MSC Full assessment. More information is available on the respective [MSC fisheries page](#).



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