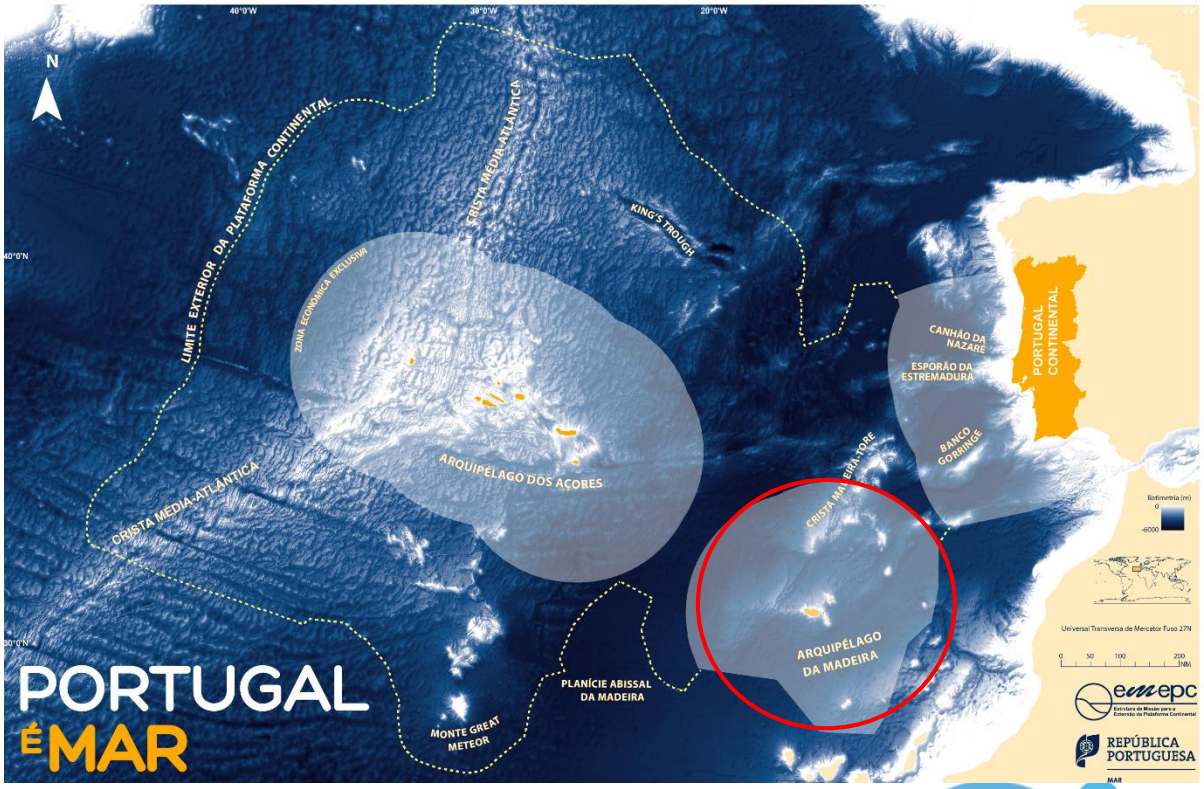
Environmental, Economic and Social data, its importance and collection in Recreational Fisheries, case of Madeira - most significant issues, and the way to solve them

Filipe Henriques (2021)

Madeira Archipelago



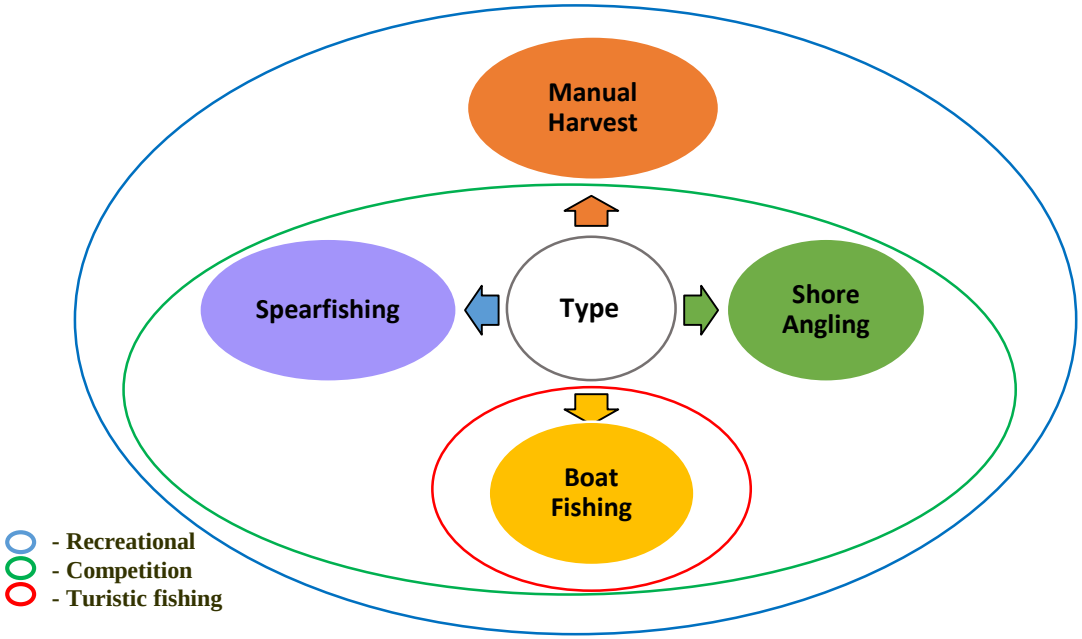

- **North Atlantic Ocean, in a region known as Macaronesia**
- **Distance from capital city (km): 950**
- **Coastline (km): 402**
- **EEZ (km²): 442 248**
- **Population: 254 876**



Madeira Marine Recreational Fisheries

Recreational fisheries definition: **"capture of marine species, without commercial or scientific purposes"** (Regional Legislative Decree nº 19/2016/M):

All Types are subject to licensing and monitoring



Constitutes an activity of relevant economic and social value

Spearfishing

Spearfishing surveys → 2004 (n=590)
2017 (n=190)

Fishing effort

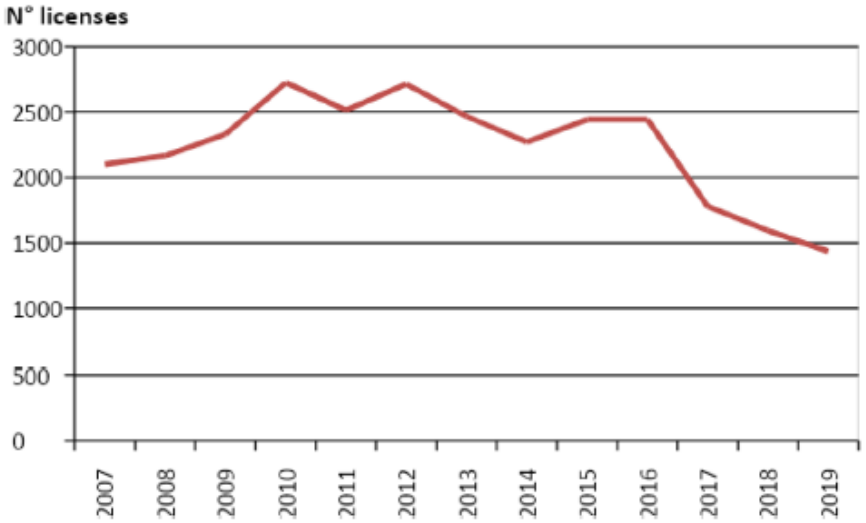
2004 (n= 569) → 31,2 days/year
2017 (n= 184) → 69,4 days/year

Catches per year

2004 (n= 1685 + 123) → 321.906 fishes
2017 (n= 2018) → 732.341 fishes → 517.7 T.

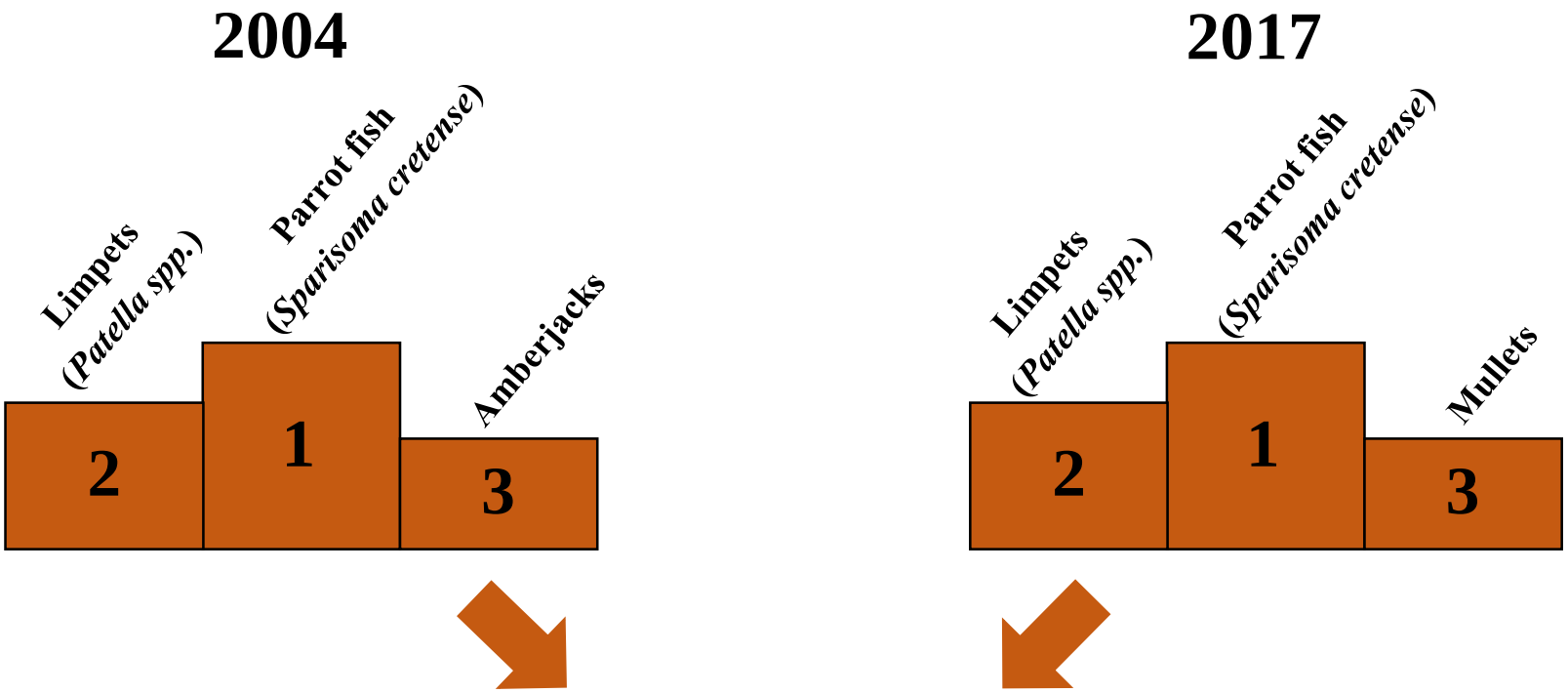
CPUE

2017 (n= 2018) → 1,5 ± 0,6 fishes/hour



Trend in the number of spearfishing licenses from 2007 to 2019.

Spearfishing



40 fish taxa

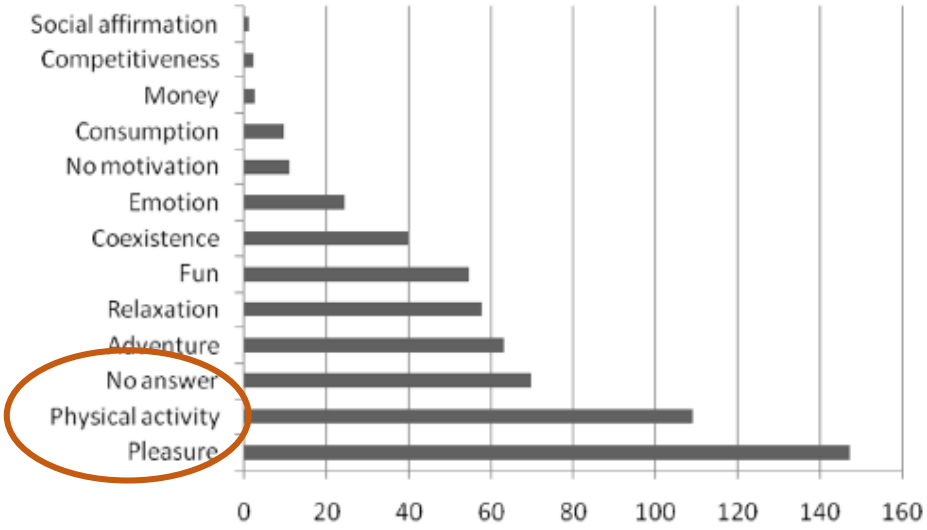
12 invertebrate taxa

(4 crustacea and 8 molluscs)

Spearfishing

Fisher's socio-economic profile

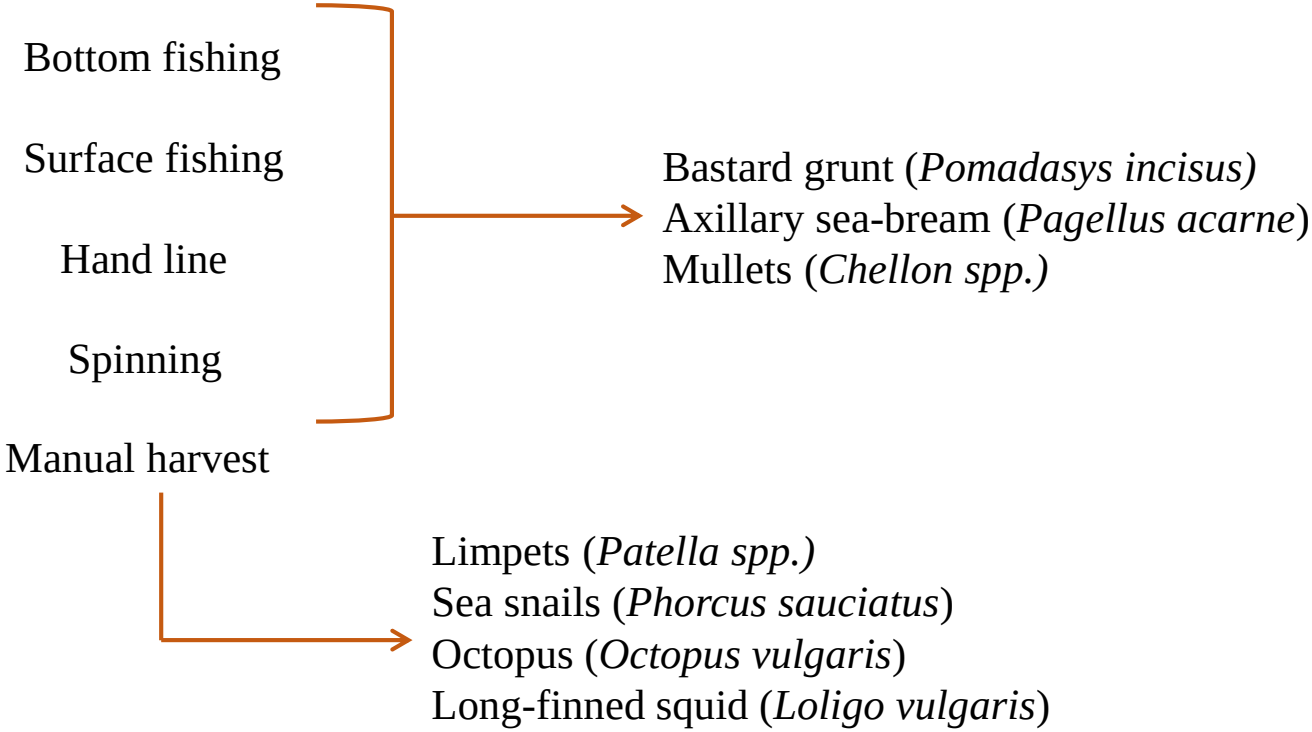
- Male
- Madeira resident (mostly from Funchal)
- Started as children
- Experienced
- Fish all year round
- Practices other recreational fishing types
- Mean annual expenditure per angler 465,40 ± 798,80 € (2017, n=174)
- Total annual expenditure per year around € 0.88M.



Spearfisher's motivations in 2004 (n= 590)

Angling

Angling survey 2017 (n = 653)



Shore Angling

65,1 ± 62 days per year

CPUE = 0,35 ± 0,26 kg/angler/hour

4825 angling licenses

520,7 T/year
or
113,3 kg/fishermen/year (Subsistence?)

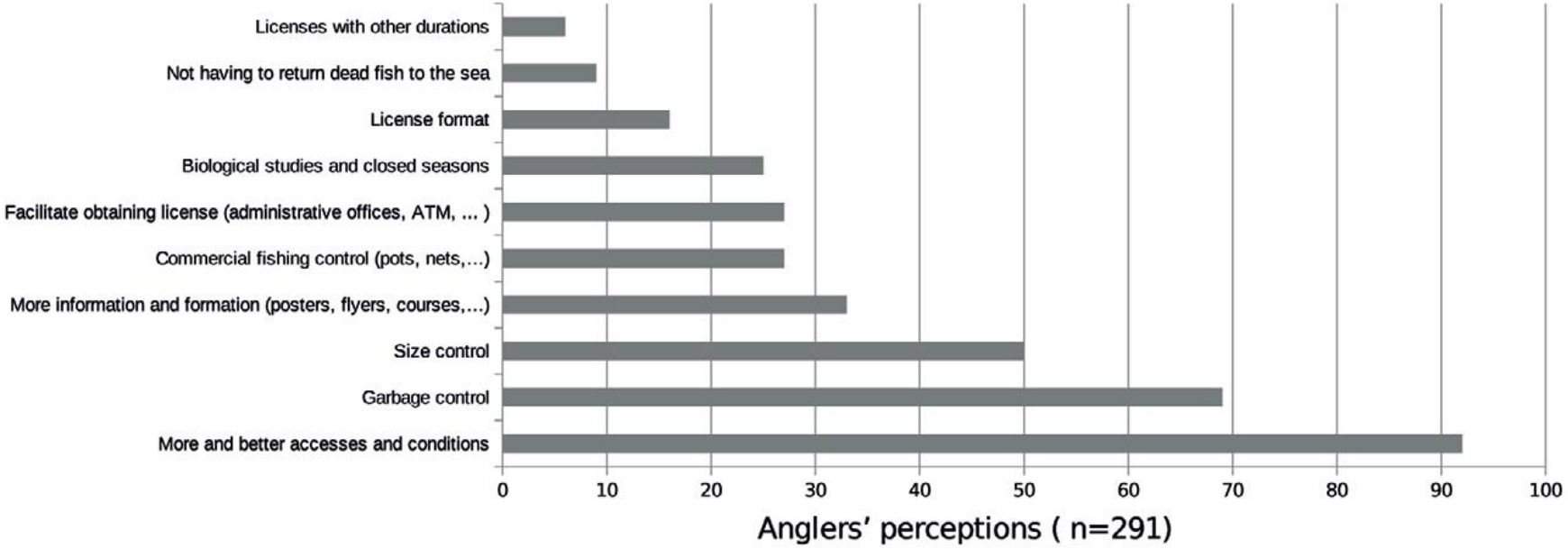
Global per capita fish consumption = **20.3 kg/year** (FAO 2020)

Angling

Fisher's socio-economic profile

- Male
- Married
- Madeira resident (mostly from Funchal)
- Age between 31 and 50 years
- Secondary or lower educational level
- **No salary income**
- Fishes in the south part of the island and close to their home in company
- Fishes all year round with greater effort on weekends
- Average effort 5,3 ± 2,3 hours per trip
- Mean annual expenditure per angler €254.3 ± 413.5
- Total annual expenditure per year around €1.16 M

Angling



Anglers' perceptions about recreational fisheries regulation and possible improvements.

Big Game Fishing

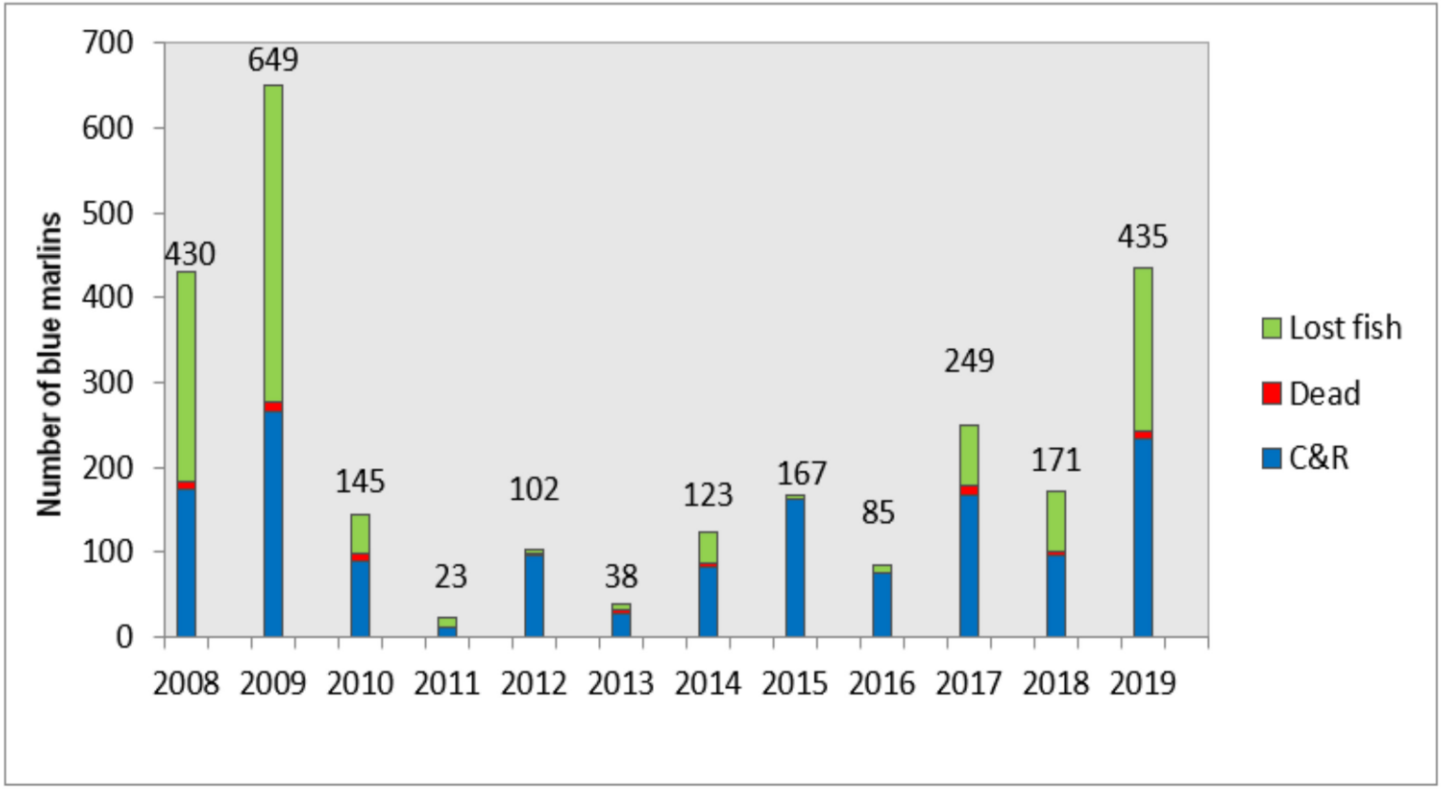
2017	2018	2019	
1192	1048	857	Fishing trips
7790	6983	5760	Total hours
216	104	280	Blue marlins captured
0,028	0,015	0,049	CPUE

Big Game Fishing

2017	2018	2019	
57,4%	40,3%	70%	% Blue marlin (*Maikara nigricans*)
42,6%	59,7%	30%	% fishes from other species

White marlin
Big eye tuna
Wahoo
Dolphinfish

Big Game Fishing



Number of registered blue marlin individuals catches by year from 2008 to 2019 (lost fish: fish that escaped after biting the lure; C&R: catch and release).

Next steps

- Maintain a regular **Recall surveys** and **logbooks** in the ports and main access points

- Develop **Web based logbook**

- Develop user friendly **Mobile app** in PT language:

- Catch volume
- Species composition
- Discards
- Fishing Effort
- Economic expenditures
- License renewal
- Economic expenditures

- Fisheries / **Biological Sampling** of Tournaments/Championships

Empirical data

- Catch Volume
- Species Composition
- Fishing Effort
- Species Morphometric Data (Weight and Lenght)


Thank you for
your attention