

CONTRIBUTION TO THE STUDY OF CATCHES OF SHARKS AND RAYS IN THE WATERS OF ITAPERERA, MUNICIPALITY OF MANDROMODROMOTRA, ANOSY REGION SOUTH OF MADAGASCAR

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Submission:

Background

Madagascar is recognized worldwide and benefits from marine ecosystems. As part of the studies, many of the marine and coastal species are the subject of scientific research. As for cartilaginous fish, little in-depth research has been carried out so far in Malagasy waters (Cooke, 2012) while many species of migratory sharks and rays are recorded there (Fowler, 2014). Only rapid inventories of these species have been carried out in a few regions of Madagascar. Cooke has carried out studies concerning elasmobranchs in several regions of the island and in his recent publication (2012), he states that 81 species of sharks and 40 rays are encountered in Malagasy waters. Each year, several species of sharks are exploited in an irrational way; According to (McVean et al, 2006), many species of sharks and rays are present and are intentionally or accidentally caught in fisheries

Yet elasmobranchs are characterized by slow reproduction and late maturity (Cailliet et al, 2005). What makes their heavy exploitation worry current researchers because the collapse of shark stocks would represent a great threat to the sustainability of marine ecosystems. Despite their intense exploitation, the biology of elasmobranchs is less known because the life cycle, reproduction and population dynamics of these species are only available for a few species of interest to fishing (Cailliet et al, 2005). In the Anosy region, southeast of Madagascar, no data has been published scientifically despite its richness in marine resources.

As a result, a study was initiated in an Itapera village targeted by cartilaginous fish fishing, the theme of which is: "contribution to the study of catches of sharks and rays in the waters of Itapera, rural commune of Mandromodromotra, Anosy region".

The specific objectives are:

- identify the species of sharks and rays caught in the waters of Itapera;
- determine their fishing technique;
- assess the importance of shark and ray fishing and determine their economic values;
- and identify the impacts of incidental captures in shark and ray fishing gear.

Method

5 Documentation

Documentation searches were carried out at the IHSM library of the University of Toliara to complete the information on the subject of study. Then, research on the Internet represents an essential and indispensable tool for collecting the different types of information on the study to be done thanks to the evolution of information

and communication technology

1.1.6 Fisher surveys

Before starting the survey at the landing site, a survey sheet was prepared to facilitate the collection of data offered by the fishermen. At the time of landing the fish products, and especially at home, open questions concerning the names and age, the fishing gear used, the description of the fishing techniques, the vernacular names of the cartilaginous fish marketed and the marketing have were investigated and noted.

1.1.7 Catch Tracking

This step consists of monitoring the fishermen's catches on a daily basis both at the landing site and at the local market place.

Results

Fishing gear used

- Using jarifa and ZZ
- Use of longline
- boat

2 Shark and ray fishing season

Shark and ray fishing gear is only used between June and December.

3 Shark species caught

Interview and survey of fishermen identified 11 shark species caught in Itapera waters.

There are : *Isurus paucus*, *Carcharhinus plumbeus*, *Carcharhinus brachyurus*, *Carcharhinus amblyrhynchos*, *Carcharodon carcharias*, *Sphyrna zygaena*, *Galeocerdo cuvier*, *Carcharhinus melanopterus*, *Alopias pelagicus*, *Mustelus sp*, *Carcharhinus limbatus*.

5 Rays species captured in Itapera waters

The interview and the survey of the fishermen made it possible to identify 8 species of rays caught in the waters of Itapera

There are : *Mobula eregoodootenkee*, *Mobula japanica*, *Rhinoptera marginata*, *Rhinobatos albomaculatus*, *Aetobatus narinari*, *Torpedo marmorata*, *Dasyatis marmorata*, *Dasyatis sp*.

- Results of shark and ray catch monitoring

- Species identified

26 individuals of sharks belonging to 4 families grouping into 7 species were inventoried including:

6.2 Monitoring of ray catches

6.2.1 Species identified

76 individuals grouping together in 7 species of rays have been identified there.

Conclusion

In the village of Itapera, Anôsy region, traditional fishing is a very old activity for the coastal population. It is a real source of life for them (food, source of income). Fishing for rays and especially sharks is very important, but fishermen use traditional techniques. During the hot season, the use of jarifa and ZZ causes accidental capture like turtles and dolphins.

This study observed the number and size of cartilaginous fish and the species caught by fishermen; including their used gear, techniques and economic value.

During 2015 fishermen caught 46 individuals of sharks belonging to two families. Shark and ray fishing is very popular in the village of Itapera. In fact, 14 species of cartilaginous fish have been inventoried there, including 7 species of sharks and 7 species of rays. The shark species are: *Alopias pelagicus*, *Mustelus* sp, *Carcharhinus limbatus*, *Galeocerdo cuvier*, *Carcharhinus plumbeus*, *Sphyrna zygaena* and The 7 ray species are: *Rhinobatos albomaculatus*, *Aetobatus narinari*, *Torpedo marmorata*, *Dasyatis marmorata*, *Dasyatis* sp, *Rhinoptera marginata*, *Mobula eregoodootenkee* . The fishing gear for catching these individuals is particularly the ZZ, jarifa and the longline. The marketing and price of product especially to sharks and rays at the village level is a problem for the fishermen, they are not satisfied with the price that the fishmongers as well as the fin collector have offered