Potential impact of Gillnets fisheries on Indian ocean ecosystems?



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➢ Major increase of driftnet catches in the IO, especially since 1990, and the UNDP moratorium on large FMD in the high seas (June 1992)

Fishing zones of this fishery remain widely or totally unknown: no log books &no observers

These very large and increasing catches by Indian Ocean gillnets are totally unique world wide, because this gear has been very often banned at national & internationaml levels because of its dangerous impact on oceanic ecosystems: killing many dolphins, turtles & other sensitive species.

FMD total catches by country Total catches of Indian Ocean gillnets, by country



Sri Lanka & Iran producing 54% of the total FMD catches in the Indian Ocean (last 10 years); followed by India & Indonesia & Pakistan.

Number & sizes of driftneting vessels?

- Large numbers of fishing vessels using gillnets in the Indian Ocean have been identified: for instance 1000 for Iran and + 2000 for Sri Lanka
- These vessels are most often artisanal vessels of small sizes, even when then often fish very far from their countries
- Because of their small sizes and artisanal status, the total yearly numbers of fishing vessels using driftnets in the Indian Ocean remain widely questionable



Number of Iranese Offshore drifnetters as a function of their total length declared by Iran to the IOTC (an average length of 22 meters)



Driftnets length: 2.5 miles, 5 miles or longer?, & what are their total length deployed daily?

- The legal & theoretical total length of the nets that are deployed daily by each vessel is 2.5 miles.
- However, it is very easy to use 2 nets of 2.5 miles, then a net of 5 miles
- Absolutly no legal controls of these real length of fishing nets, by the flag contries or by UN/FOA/IOTC.
- EU fishermen on purse seiners frequently certify that they have been often measuring these nets at total length over 5 miles
- Total length of driftnet deployed permanently are unknown,
- But it can be estimated: 3000 vessels*2.5 miles or 5.miles, i.e. a permanent oceanic wall of nets with a total length between at least 6000 to 12000 miles.



Schematic conceptual view of the total length of drifting nets that may be deployed daily dy a fleet of 3000 vessels using 2.5 miles long nets.

What Driftnet fishing zones?

- Significant fractions of the driftnet catches are probably taken in coastal waters and in national EEZ,

- But this does not reduces the risk of accidental mortality of turtles, dolphins and other species

- Possibly the contrary: this risk may be increased?

- A large fraction of the driftnet fleets are increasingly operating in the same areas as purse seiners and longliners: frequent observations by EU purse seiners of large fleets of driftnetters that are active between 15°N and and south of the equator



Exemple of Iranian driftnetter setting his net: january 2011, 0°40N and 67°30E

Fishing depth of Indian Ocean drifting nets?

- The technical characteristics of the drifting nets may vary between fleets and as a function of vessel sizes
- But it would appear that most offshore drifnets are reaching a depth of about 10 to 20 meters or more.
- It these shallow layers of Indian Ocean pelagic tropical ecosystems all the shallow species that frequently need to breath fresh air, such as dolphins, whales and turtles, are in serious danger to be caught by these nets.
- Especially taking note that most of these driftnet are set during the night
- Other species of fishes such as sharks and bilfishes, may also be easily caught in these drift nets, but these quantities remain widely unknown in the IOTC statistics.

Potential bycatches of FMD?

- Species that are potentially caught by driftnet have not been studied quantitatively in the Indian Ocean
- However, the species that are potentially in danger in such fishery and intertropical ecosystems are well identified in many oceans and

studies:



whales



turtles





dolphins

sharks

Exemple of whale and turtle mortality in a driftnet, (probably Iranian, based on its configuration & float) (October 22nd 2011)



Drifnet fisheries also facing serious uncertainties in the species composition of their tuna catches: ghost bigeye catches?

-For instance: during the 2000-2010 period, total declared catches of bigeye of only 0.05%, -This percentage is extremely low, taking into account the large quantities of tunas caught by this gear during this period (a total over 4 million tons!) and the fact that driftneters are often fishing in the equatorial bigeye nurseries where they are frequently caught by purse seiners. -There is a high probability that small bigeye have been significantly caught by drifnet but misidentified in their statistics.



Potential fishing zones of Iranian drift net fleets (dotted line) and bigeye PS catches by 1° during the 2002 2008 period. Blue point shows positions of drifnets concentrations observed from purse seiners of the Iranian fleet (October 2009).



Radar of a purse seiner screen on a purse seiner showing a « typical » concentration of Iranian driftnetters in a fishing zone where bigeye are significnat: 24 vessels observed in a radius area of only 15 nautical miles.

Conclusion

The major development of large scale oceanic driftnet fisheries in the Indian Ocean has been very poorly followed by the IOTC & its scientists This follow up of large scale oceanic & artisanal fisheries and of their by-catch would be extremely difficult: for the countries and for IOTC..... Observers are difficult but possible to envisage in such small oceanic vessels, at a low rate of observers: 1%? The potential ecological impact of driftnets and their accidental mortality on sharks, turtles, dolphins, whales & other sensitive species, cannot be estimated by the IOTC scientists in the total absence of observer data. However, there are strong scientific evidence, due to their fishing mode and areas, that these drifnets are probably a major source of accidental killing of various sensitive & undesired species: dlphins, turtles,& all. The IOTC ecosystemic studies of these species cannot be consistent if this source of major potential accidental mortality remains ignored. The IOTC should find ways to estimate these accidental mortalities of driftnets: scientific fishing cruises? On board cameras? And to reduce them When coastal countries have a legitimate right to develop their tuna fisheries, there should be a recognition upon the absolute need to maintain healthy pelagic ecosystems and to protect their sensitive species.