

## Note on swordfish catches collected during commercial operations and research cruises onboard pelagic longliners of the La Reunion fleet from 2006 to 2010

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The observer program of the longline fishery based in La Reunion is supported by E.U. funds allocated to implement the “Data Collection Framework” (Council Regulation (EC) No 199/2008 of 25 February 2008 concerning the establishment of a Community framework for the collection, management and use of data in the fisheries sector and support for scientific advice regarding the Common Fisheries Policy ).



# INTRODUCTION

Visible face of catches

LANDINGS



STOCK ASSESSMENT

C/E, LD

Invisible face of catches

BYCATCH



Impacts on SA issues :

- . Selectivity curve
- . Catch at age distribution
- . CPUE underestimates



## INVISIBLE FACE OF SWORDFISH CATCHES IN PELAGIC LONGLINING

- ❖ Undersized swordfish
  - ✓ discarded sometimes alive but often dead due to the speed of the hauling (> 7 knots)
  - ✓ retained for self-consumption but not landed

- ❖ Discards of depredated swordfish (sharks, toothed whales) affecting all size classes



# DATA ANALYZED

IOTC – 2008 – WPEB - 13

The first year of **SEALOR** : Database of **SEA**-going observer surveys monitoring the local pelagic **L**ongline fishery based in La **R**eunion

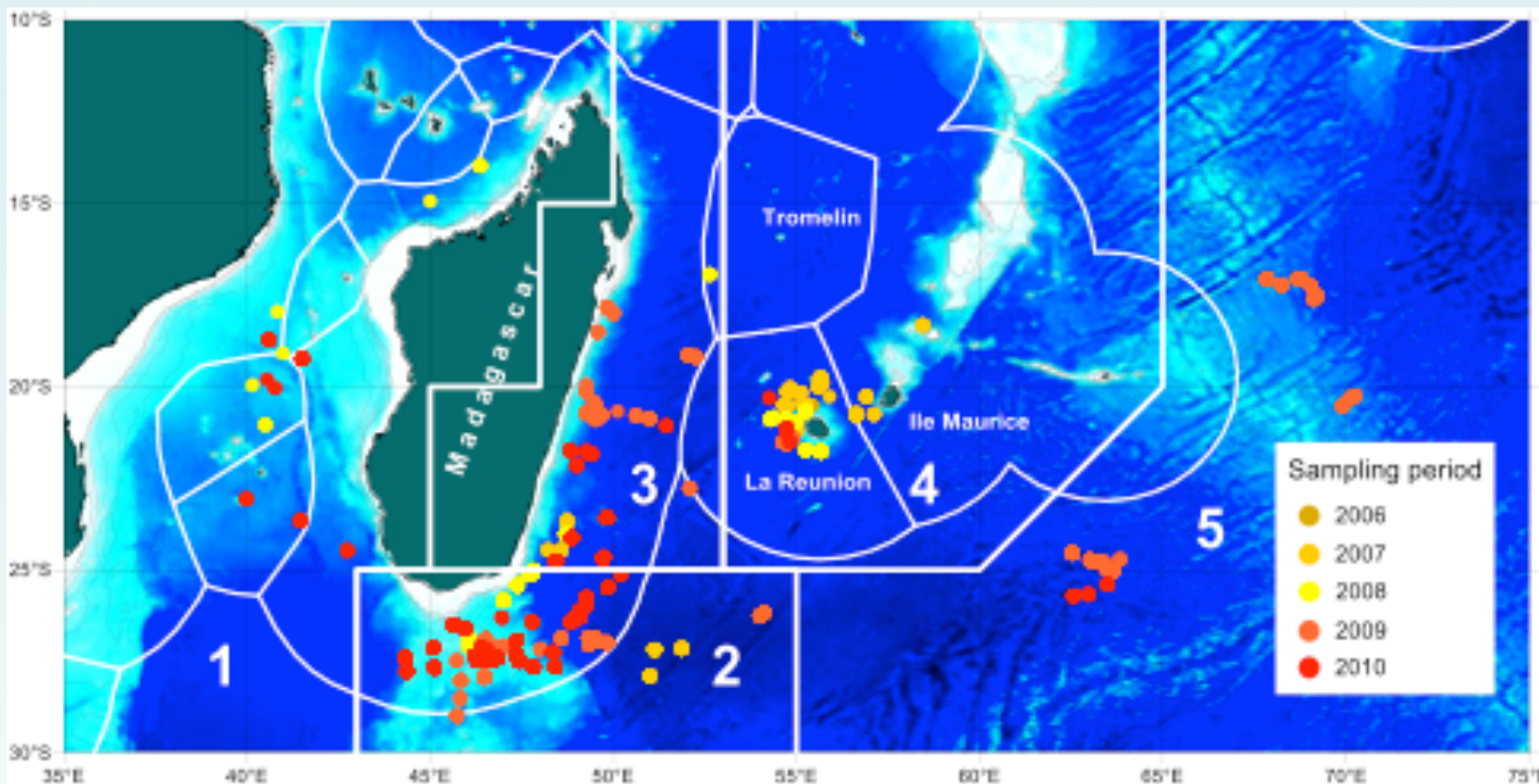
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Year	Hook	Fish caught	SWO retained for commercial use	Discards	% of non commercial fish/discard ratio
<b>2006</b>	5500	30	30	0	0/0
<b>2007</b>	16168	128	93	35	27.3/38
<b>2008</b>	16788	126	112	14	11.1/13
<b>2009</b>	36770	255	184	71	27.8/39
<b>2010</b>	64180	818	540	278	34.0/51
<b>Total</b>	136678	1357	959	398	29.3/42

Table 1. Fishing effort & swordfish sampled for Reunion island pelagic longline fisheries by observers embarked within EU “Data Collection Framework” program.

Discard ratio = number of fish non-commercialized or discarded per 100 fish landed

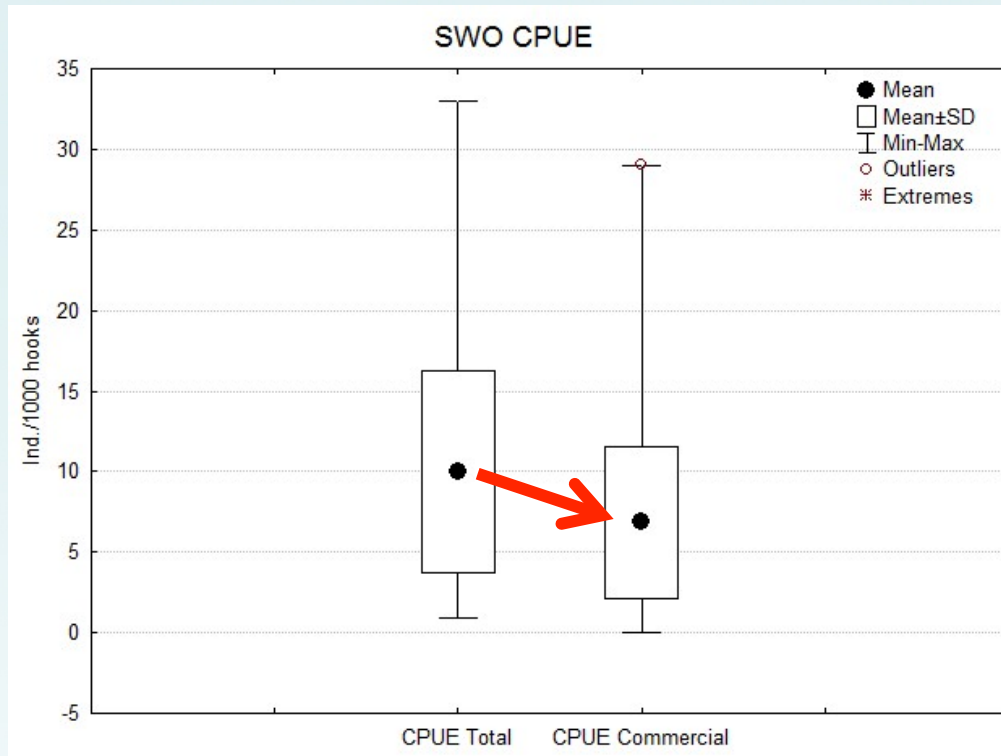
# DATA ANALYZED



Geographical positions of fishing sets sampled by observers.

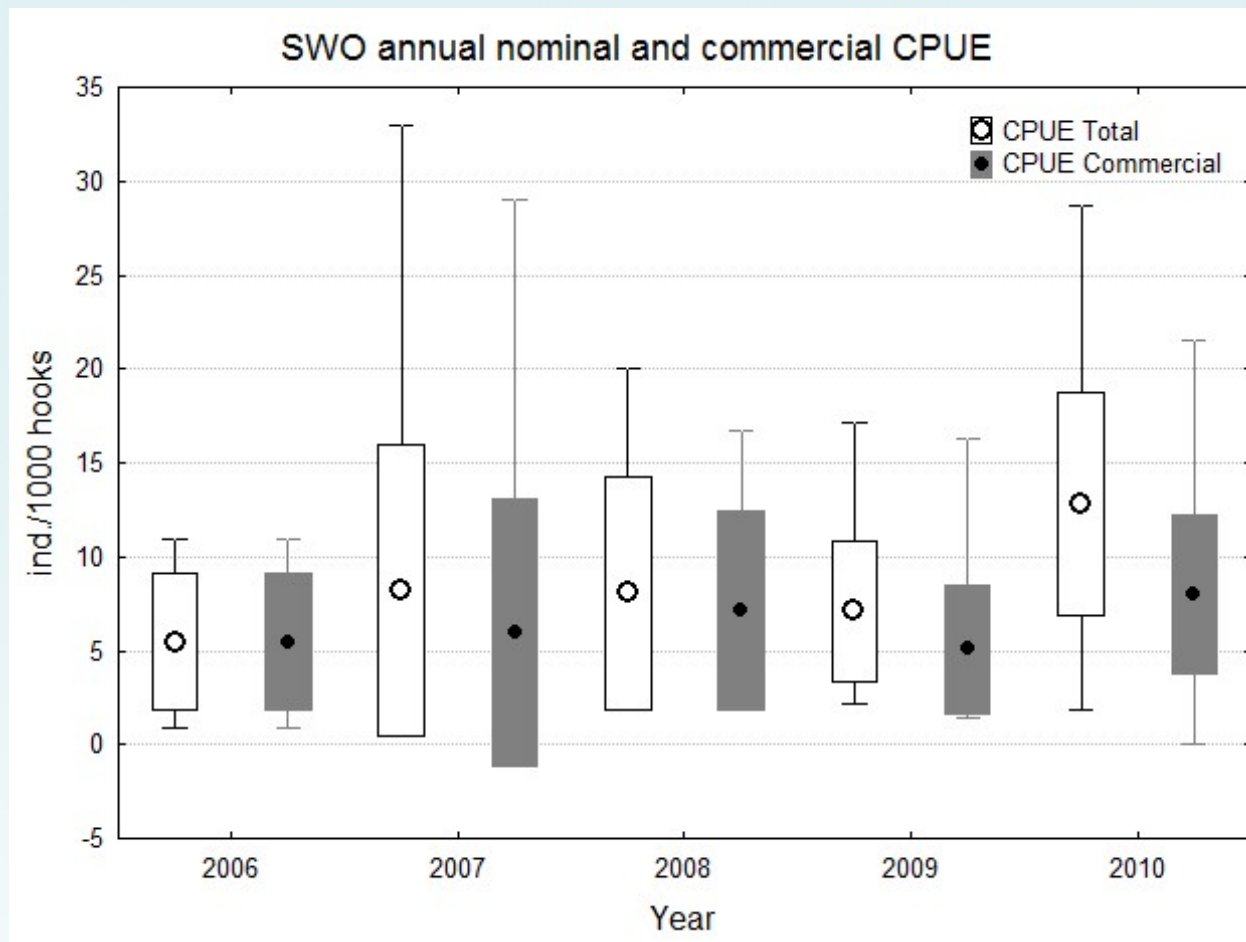
1 Mozambique Channel, 2 South of Madagascar, 3 East of Madagascar, 4 Reunion-Mauritius and shoals, 5 Eastern Zone.

# RESULTS



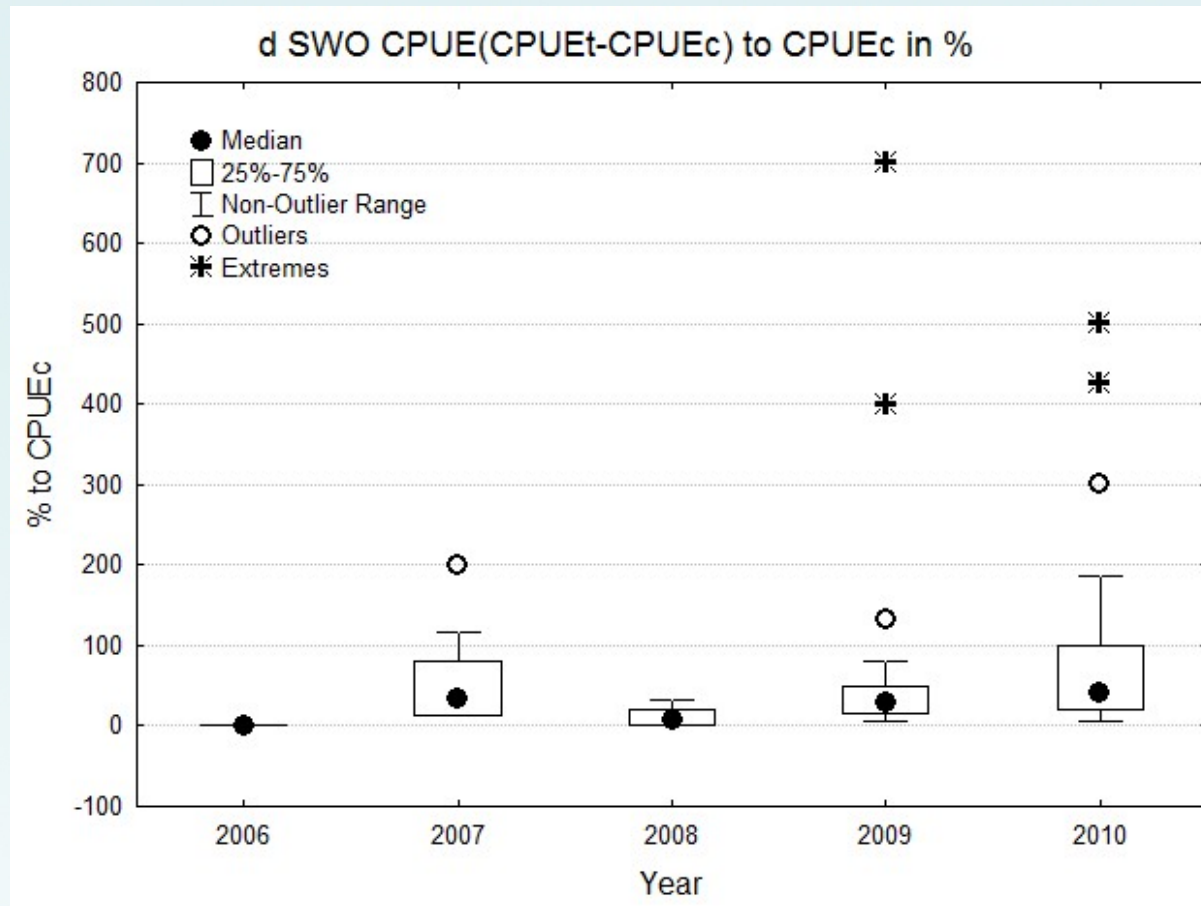
Nominal SWO CPUE (ind./1000 hooks) for all sampling period: total (left plot) and commercial (right plot). Dots are mean, boxes =standard deviation and bars = ranges.

# RESULTS



Nominal annual SWO CPUE (ind./1000 hooks) for all sampling period: total (white plots) and commercial (grey plots). Dots are mean, boxes = standard deviation and bars = ranges.

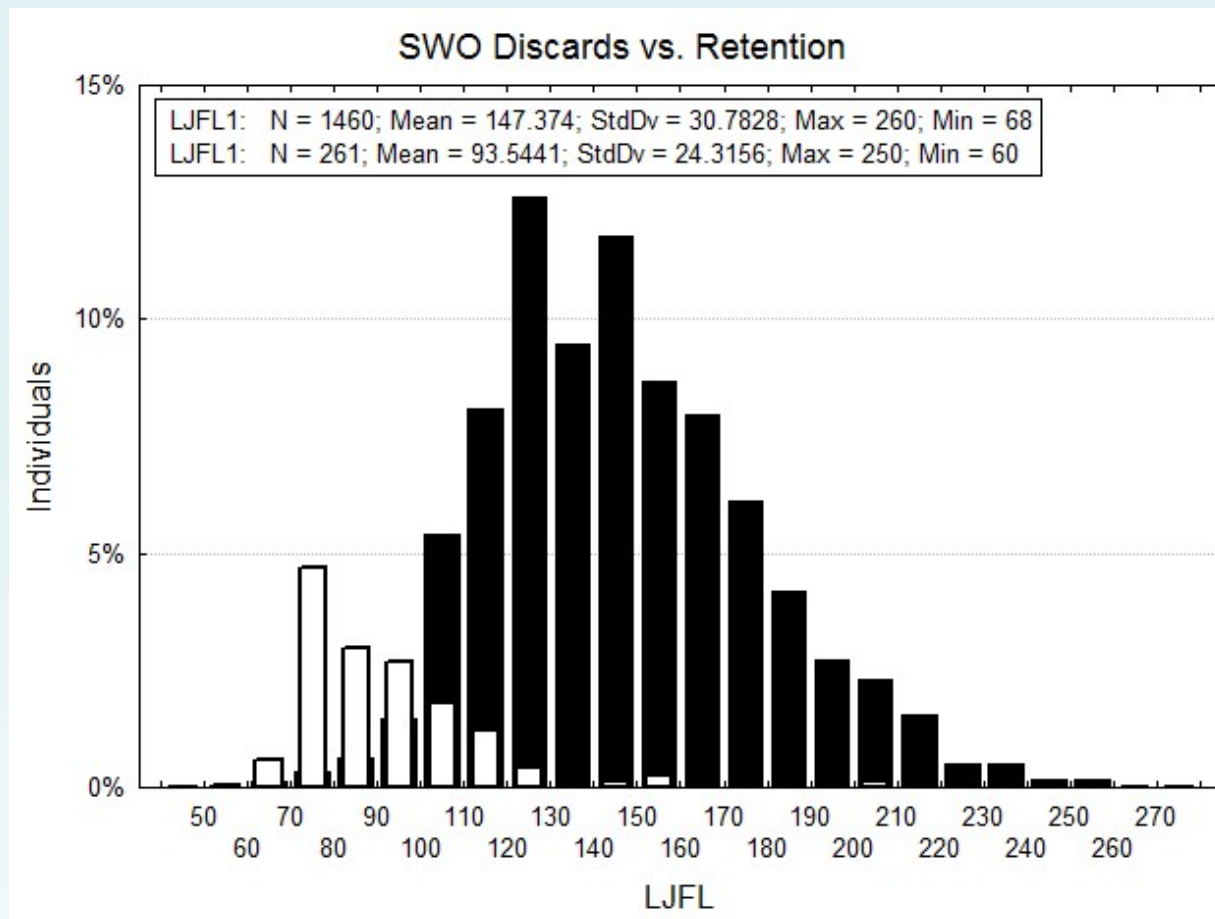
# RESULTS



Boxplots of the relative DPUE (CPUEtot – CPUEcom) / CPUEcom. Dots are mean, boxes = standard deviation and bars = ranges.

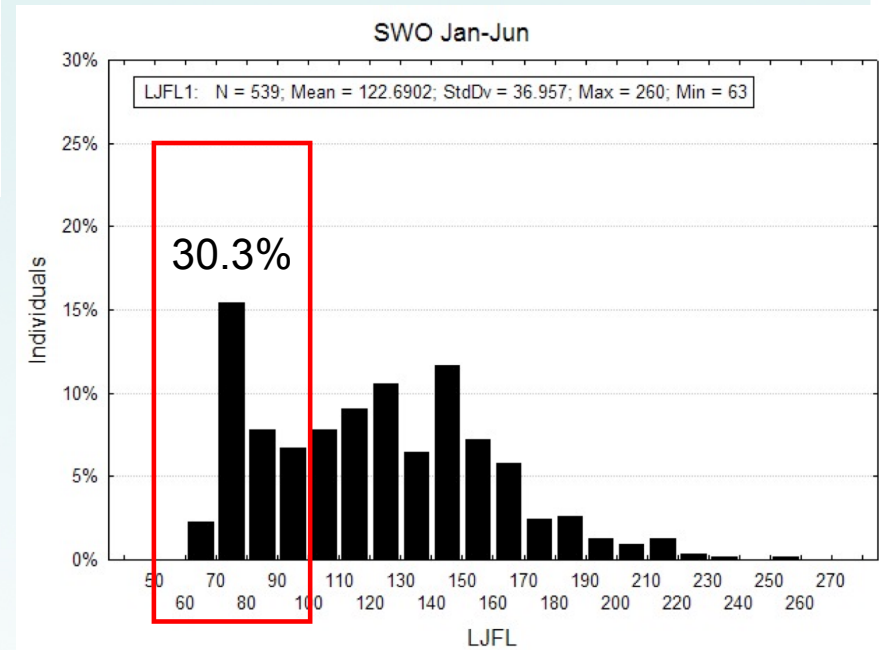
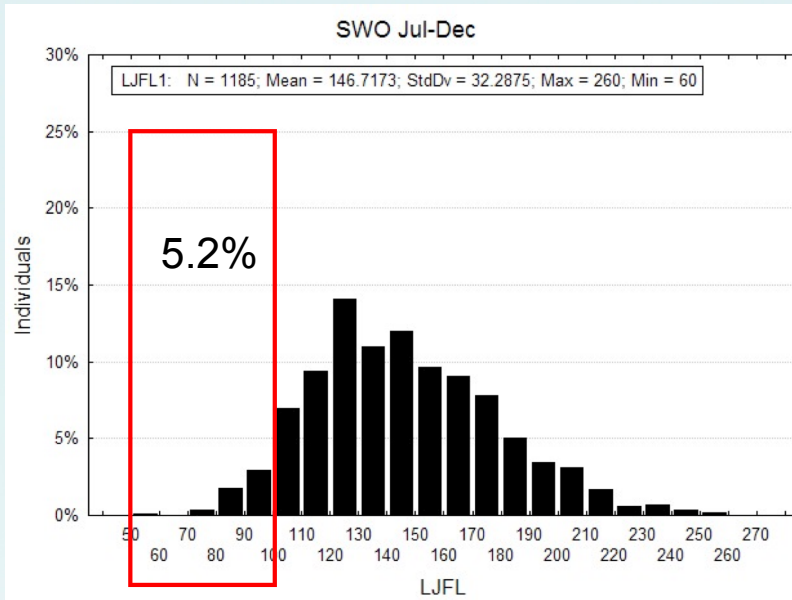


# RESULTS



Size frequency distribution of swordfish *X. gladius* (lower jaw – fork length LJFL) retained by fishermen (black bars) and retained for onboard consumption or discarded (white bars). Note that size data on depredated SWO are non-representative due to problem of size reconstruction for damaged fish.

# RESULTS



Size frequency distribution of swordfish *X. gladius* (lower jaw – fork length LJFL) Red boxes outlined undersized non commercialized individuals. (Period 2006-2010).

## CONCLUSION

- ❖ Based on current practice of catch data reporting by fishing fleet based at Reunion Island we assume that all non-commercial catch are subject to non-reporting.
- ❖ Regarding swordfish ~30% of individuals caught (undersized or depredated) are non-reported through the data reporting system based on logbook.
- ❖ In the SWIO, depredation essentially underlies a significant underestimation of the SWO CPUE in number (from 10 ind./ 1000 hooks to 6.9/1000 hooks). For this region, it might be interesting to test the effect of this phenomena on CPUE values and stock biomass estimation.
- ❖ Unreported undersized swordfish distorts the size frequency distribution (1<sup>st</sup> semester) of catches with a likely effect on the SWO selectivity curve.
- ❖ As observations onboard are one of the best way to assess the impact of the « invisible face » of catches on stock status, countries must encouraged and supported to implement a national observer program (NOP).

