TECHNICAL REPORT No. 4 – ANALYSIS OF MEASURES TO COMBAT IUU FISHING IN THE IORA REGION

'TECHNICAL ASSISTANCE TO IORA FOR THE IMPLEMENTATION AND COORDINATION OF IORA ACTION PLAN ON FISHERIES, AQUACULTURE AND MARINE ENVIRONMENT'

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Analysis of measures to combat IUU fishing in the IORA region

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TABLES OF CONTENTS

LIST OF FIGURES

LIST OF TABLES

ABBREVIATIONS AND ACRONYMS

AoC	Area of competence (RFMO)
AREP	Advance request for entry into port
CPC	Contracting party to the Commission
CNPC	Cooperating non-contracting party to the Commission
CNPC	Cooperating non-contracting party to the Commission
EEZ	Exclusive Economic Zone
EIO	Eastern Indian Ocean
EU	European Union
FAO	Food and Agriculture Organisation (of the United Nations)
FAOCA	FAO Compliance Agreement
FMC	Fisheries monitoring centre
FOC	Flag of convenience [State]
HSVAR	High Seas Vessel Authorisation Record
IORA	Indian Ocean Rim Association
IOTC	Indian Ocean Tuna Commission
IPOA	International Plan of Action
IUU	Illegal unreported and unregulated (fishing)
MCS	Monitoring, control and surveillance
NIO	Northern Indian Ocean
NOAA	National Oceanographic and Atmospheric Administration
NCNPC	Non-cooperating non-contracting party to the Commission
NPOA	National plan of action
PSMA	Agreement on Port State Measures
RFMO	Regional fisheries management organisation
RPOA	Regional plan of action
SDG	Sustainable Development Goal
SIOFA	Southern Indian Ocean Fisheries Agreement
UNCLOS	United Nations Convention of the Law of the Sea
UNFSA	United Nations Fish Stocks Agreement
VMS	Vessel monitoring system
WCPFC	Western Central Pacific Fisheries Commission
WIO	Western Indian Ocean

1. Background and purpose of the study

The Indian Ocean Rim Association (IORA) and France through the Agence Française de Développement (French Development Agency) (AFD) signed a Memorandum of Understanding (MoU) on the 9th of March 2020 for "Strengthening the Capacities of IORA in Promoting the Blue Economy and Fisheries Management".

The partnership will support the implementation of the IORA Action Plan (2017-2021) with an allocation of EUR1 million over three years. It will offer expertise, training, networking and material resources to decision makers, officials and experts working to promote regional cooperation in blue economy and fisheries management issues. In addition, the project will strengthen the capacity of the IORA Secretariat.

The overall objective of the technical assistance (TA) is to "support IORA and its Member States in the coordination and implementation of the Action Plan on Blue Economy and Work Plan of IORA CGFM, with a strong focus on fisheries, aquaculture and protection of marine environment."

One of the specific objectives of this TA is "to combat IUU (illegal, unreported and unregulated) fishing in IORA region". In the context of this objective, three activities are planned as part of the project's response to the IORA Action Plan:

- Activity 1.1 Conduct an assessment of the capacity needs required (human and institutional) and the current level of implementation of Port State Measures in the IORA region;[1]
- Activity 1.2 Support IORA Member States to exchange information on IUU fishing vessels among Member States – support provided to the IORA Secretariat by the project's main resident expert;
- Activity 1.3 Analysis of measures against IUU fishing vessels and recommendations.

The present study is provided in fulfilment of activity 1.3.

1.1 Introduction and methodology

Illegal unreported and unregulated (IUU) fishing undermines the sustainable management and exploitation of the world's fisheries resources. The impacts of IUU fishing are first environmental driving the depletion of fish stocks, and secondly social and economic, affecting those working in the fisheries sector, and communities depending primarily on these resources.

The objective of Sustainable Development Goal (SDG) 14,[2] is to '*conserve and sustainably use the oceans, seas and marine resources*'. A key target associated to SDG 14 – *to eliminate IUU fishing by 2020* – will not be achieved and combating IUU fishing remains a momentous challenge at the global level, including for Members of the Indian Ocean Rim Association (IORA).[3]

[1] Gaudin, C. (2021) Assessment of the Capacity Needs (Human and Institutional) and the current Level of Implementation of Port State Measures (PSM) in the IORA Region, Technical Report No. 5, COFREPECHE. 126 p.
[2] Life Below Water
[3] Australia, Bangladesh, Comoros, India, Indonesia, Iran, Kenya, Madagascar, Malaysia, Maldives, Mauritius, Mozambique, Oman, Seychelles, Singapore, Somalia, South Africa, Sri Lanka, Tanzania, Thailand, UAE, Yemen.

This report:

1. Assesses the performance of IORA member countries against selected and published indicator scores on IUU fishing. The paper provides a performance snapshot against global scores collected in mid-2018 and published in early 2019 as part of the global IUU Fishing Index,[4] to provide an overall picture of IORA in terms of exposure to, and responses – in the form of MCS measures – to IUU fishing;

2. Provides an analysis of selected measures to combat IUU fishing that have been adopted by IORA members. The paper provides an assessment of performance on given indicators in May 2018 and in December 2020, to highlight progress that may have been made over the past two and a half years, and to identify consistencies, differences and trends between countries. This comparative analysis, which spans both time and space, provides the basis for findings and recommendations.

Due to the current international sanitary situation and coverage of the study, it was not possible to undertake field missions to IORA Member States. The consultant undertook an assessment from publicly available and published information, from his previous work and affiliations on the subject as well as responses to a succinct questionnaire, obtained from the IORA Member States through the IORA Secretariat. This report was thus prepared as a desk-based study, it is based on secondary sources of information, and IORA members were consulted using a short questionnaire prepared under this initiative (see Annex II).[5]

Throughout the study, countries are presented in a geographical manner, as they surround the Indian Ocean from the south-west extremity, via the northern Indian ocean to its south-east extremity. These regional groupings, which fall into the western, northern and eastern groups, can be gathered from table 2. These groupings – rather than listing countries geographically – are useful to assist in detecting regionally-embedded trends.

Following this introduction (Chapter 1), the report is further segments into 4 technical chapters. Chapter 2 presents the overall IORA exposure to and performance in combatting IUU fishing, looking specifically at IUU Fishing Index results. Chapter 3 assesses IORA MS performance in combatting IUU fishing across a number of indicators at coastal, port, and flag State levels, and state-of-play and progress achieved in recent years (progress indicators rooted in IUU Fishing Index scores and the 2018 baseline). Chapter 4 focuses on trends – both in terms of progress made over the most recent years, as well as those that appear to have a geographical component. Chapter 5 presents a range of key recommendations, some of which concern the majority of IORA MS, and some of which only given groupings or individual members.

[4] www.iuufishingindex.net

[5] The questionnaire was circulated through the IORA Secretariat to IORA MS in October 2020. By March 2021, nine out of twenty-two IORA MS had responded. These are South Africa, Madagascar, Seychelles, Mauritius, Maldives, Sri Lanka, Bangladesh; Malaysia and Indonesia.

2. Status of IORA Members on the IUU Fishing Index

This section looks at the overall dynamics of combatting IUU fishing across the IORA region, based on the scores of the IUU Fishing Index, published early in 2019.

2.1 Overall IORA status on the IUU Fishing Index

Due to the absence of reliable estimates of IUU fishing at an aggregated global level that enable comparison between countries, an IUU Fishing Index[6] was developed and launched in early 2019, based on data collected in mid-2018. The IUU Fishing Index, which has been quoted dozens of times in the professional fisheries-related media since its coming to life, is a first essential stop that allows us to explore the recent degrees of IUU fishing risks to which IORA Members were exposed.

The Index establishes countries' potential exposure to IUU fishing; it does not measure levels of IUU fishing. The Index comprises 40 indicators, with each indicator applied to 152 coastal States. For each country, indicator scores are provided between 1 and 5 (1 = good/strong; 5 = bad/weak) based on indicator values and five bands/thresholds which were used to turn the values into scores. The indicators used in the Index cover the different domains of State responsibility (flag, coastal, port and general)[7], and are split into three types, which rate vulnerability to IUU fishing, apparent prevalence of IUU fishing, and response to IUU fishing.

Table 1: Global scores and IORA scores on the IUU Fishing Index (2018)

Global scores (152 coastal States)	Prevalence	Response	Vulnerability	IUU Index Score
Coastal	2.58	1.60	3.17	**2.51**
Flag	1.31	2.69	2.23	**2.01**
Port	1.31	2.43	3.98	**2.41**
General	1.28	2.68	2.66	**2.32**
IUU Index Score	**1.54**	**2.48**	**2.92**	**2.29**
IORA scores (22 IO coastal States)	**Prevalence**	**Response**	**Vulnerability**	**IORA IUU Score**
Coastal	2.76	1.45	3.49	**2.67**
Flag	1.35	2.87	2.11	**2.07**
Port	1.48	2.45	4.09	**2.49**
General	1.51	2.67	2.81	**2.42**
IORA IUU Score	**1.68**	**2.51**	**3.03**	**2.38**

Source: www.iuufishingindex.net. Note: higher scores indicate worse performance against the indicators included.

Table 1 above reports the mean 2018 IUU Fishing Index scores for all 152 coastal States and compares them to the average scores for all IORA countries, for the different domains of State responsibility and

[6] www.iuufishingindex.net
[7] indicators that are not specific to flag, coastal or port State responsibilities.

indicator types. The table shows that compared to average global scores, average IORA member country scores were in almost all cases higher/weaker (shown in red) than the global mean scores.

2.2 Individual IORA Member performance on the IUU Fishing Index

Table 2 below provides the key IUU Fishing Index values for all IORA Members as single scores for the different State type responsibilities, allowing us to develop a sense of where the strong and the weaker performers are located, and which types of State-type responsibilities are assumed in a more effective manner, and which ones are more problematic to handle. Countries in the table are arranged clockwise by geographical order from the south west IO to the north IO and then to the south east IO, allowing us to detect regional trends directly from within the table. Full country names against the Alpha-3 codes used in table 2 can be looked up in Annex I.

Table 2: IORA Member scores on the IUU Fishing Index (2018), with IORA MS organised into regional groups

Country	Region	Coastal State score (2.51)	Flag State score (2.01)	Port State score (2.41)	General score (cross-cutting) (2.32)	IUU Index score (2.29)	Mean IUU Index score by region
ZAF	WIO	2.79	2.48	2.80	2.00	**2.43**	**2.37**
MOZ		2.69	1.75	2.60	2.15	**2.22**	
MAD		3.00	1.63	2.50	2.27	**2.27**	
SEY		3.38	1.83	2.06	1.73	**2.13**	
MUS		2.88	1.88	2.56	1.73	**2.15**	
COM		2.56	1.74	2.56	3.30	**2.61**	
TZA		2.25	2.29	3.11	2.83	**2.65**	
KEN		2.50	1.74	1.89	2.53	**2.18**	
SOM		3.69	2.05	2.20	3.13	**2.75**	
YEM	NIO	3.38	1.89	3.28	3.23	**2.96**	**2.40**
OMN		2.82	1.75	1.80	1.96	**1.99**	
UAE		2.45	1.50	2.83	2.13	**2.16**	
IRN		2.45	2.30	2.87	2.46	**2.49**	
MLD		2.25	2.17	2.00	2.40	**2.23**	
IND		2.82	2.30	2.47	3.13	**2.68**	
LKA		2.06	2.57	1.83	2.57	**2.32**	
BAN		2.50	1.74	2.61	2.67	**2.41**	
THA	EIO	2.44	1.96	2.39	2.53	**2.33**	**2.38**
MYS		3.36	1.91	3.07	2.38	**2.52**	
SIN		2.45	2.20	3.42	2.21	**2.46**	
IDN		2.63	2.87	2.72	2.60	**2.70**	
AUS		1.63	2.67	1.78	1.53	**1.91**	
IORA IUU Score		**2.67**	**2.07**	**2.49**	**2.42**	**2.38**	**2.38**

Source: www.iuufishingindex.net. Note: scores in brackets in the top (header) row are the global mean for the category, while the scores in the bottom row are the mean for IORA, reflecting the scores of the last column in the bottom half of table 1

2.3 Key findings regarding IORA performance on the IUU Fishing Index

It should be noted that if IORA scores were randomly distributed around the mean of the global scores – regardless of indicator category – we would expect scores to fall more or less evenly above and below the global means. On the other hand, if IORA was doing generally better than the global average, we would expect to find more scores below the global average, and conversely, if IORA was doing generally less well, we would expect to find more scores above the global average.

We also note that the results are based on 2018 data. However, since we are looking at overall (global) and regional dynamics here, it is clear that these dynamics are still going to be in place within such a short period of time and continue to have general validity.

2.3.1 Overall IORA performance

IORA – as a group of 22 countries (see table 1) – and looking at overall scores by State responsibility (coastal, flag, port and general), and by indicator type (prevalence, response, vulnerability), we find the following:

- IORA IUU scores fall above average in every single category. This translates into the finding, that IORA as a group, and overall, is more exposed to IUU fishing risk, and is performing less well in combatting IUU fishing than the global average;
- In terms of *prevalence* indicators, IORA performs less well than the global average in all State responsibility domains, an indication that IUU fishing incidence is higher than the global average in coastal, port and flag State related domains – corroborating the above finding that combatting IUU fishing overall is weaker than average on all levels, and that IUU incidence is likely important and above average;
- Port State indicator type scores (prevalence, response and vulnerability) and the related total are all sub-par, indicating that Port State measures overall are one of the weakest domains of State performance in combatting IUU fishing across IORA. Co-incidentally, from the perspective of developing effective MCS solutions, it is also one of the least onerous to address;
- Best scores (beating the global average) relate to coastal State *response* – *i.e.* actions taken by coastal States to combat IUU fishing – and flag State *vulnerability* – *i.e.* factors that heighten risks of IUU fishing. The former relates to monitoring solutions applied in the EEZ and State membership in RFMOs, while the latter relates to the operation of distant water fishing fleets. The operation of DWF across IORA overall is comparatively more limited, and therefore results in a substantially lower vulnerability score;
- Despite an above average coastal State *response* score, the total coastal State IUU score is the weakest amongst the 4 State responsibility groups, owing to high prevalence and vulnerability sub-scores. This is indicative of the fact that overall – beyond the measures provided by the indicators deployed within the IUU Fishing Index – coastal State *response* overall is not sufficient to effectively drive down and eliminate IUU risks.

IORA Members are thus likely to experience higher degrees of IUU fishing than the global average, and their actions to combat IUU fishing are overall weaker than the global average. When looking at the three indicator types (prevalence, response, and vulnerability) and their scores, the domain of weakest performance appears to be the combatting of IUU fishing in ports, and the related

implementation of port State measures – as all three scores are above average. When comparing the overall results by State responsibility (coastal, flag, and port), the total coastal State IUU score results are the weakest by a wide margin. While actions undertaken as coastal States to monitor and protect EEZs and to participate in RFMOs to manage internationally shared marine living resources appear amongst the strongest areas of IORA Member performance, this is insufficient to turn around an otherwise low coastal State score, indicating the existence of substantial IUU fishing risk challenges.

2.3.2 Individual IORA Member performance

Table 2 renders IUU scores for individual IORA Members across the different areas of State responsibility. This table also organises countries into three geographical groups (WIO, NIO, and EIO), which roughly translates into African countries, Middle East and Asian countries, and South-East Asian countries. This serves to detect regional dynamics.

The following key results and findings emerge from table 2:

- When looking at the progression of the overall IUU Index Score by region, we find the following distribution of (above/below average) country results: WIO: 5/4; NIO: 3/5; and EIO: 1/4. This finding suggests that there is a significant gradient across the IORA membership, with overall lower IUU fishing risk in the western IO, gradually increasing as we move north, and further increasing when moving east into the eastern IO;[8]
- The three countries with the highest IUU risk overall – Yemen (2.96), Somalia (2.75), and Indonesia (2.70) – hail from the three distinct Indian Ocean regions. The same is true for the three best scoring countries – Australia (1.91), Oman (1.99), and Seychelles (2.13), indicating that there are strong and weak countries in each of the three Indian Ocean regions covered;
- However, when considering the mean region scores, NIO performs weakest. This owes to the fact that three of the IORA members in this region have exceptionally high scores, with an absence of many truly low scores to balance out things;
- Therefore, it is safe to say, that overall, the WIO is performing better as a region in mitigating IUU risk. However, it is important to bear in mind that such general statements do never qualify the situation and the actions of any single State. The two best country scores, Oman (1.99) and Australia (1.91) go to countries that are not located within the WIO.

[8] This corroborates the finding by Hosch *et al.* (2019), establishing the existence of a structuring effect of regions – as opposed to ocean basins bordering several regions – in determining the performance in combatting IUU fishing of States bordering given ocean basins.

3. Efforts by IORA Members to combat IUU fishing

3.1 Indicators of exposure to, and action against IUU fishing

Tables 3, 4 and 5 below provide actions implemented by IORA members (in geographical order from the south west IO to the north IO and then to the south east IO) in their capacity as coastal, flag and port States. Actions are provided in the form of indicators, and the number of indicators provided per State-type responsibility varies.

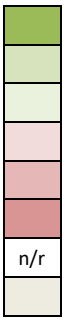
When the indicators were used in the IUU Fishing Index also, two values are indicated per indicator and country: the upper value in a cell corresponds to the IUU Fishing Index result sampled in mid-2018, and the lower value in the cell indicates the value sampled directly from countries through the questionnaire or consultation of secondary sources.

The indicators included from the IUU Fishing Index are mostly those relating to response, with few relating to prevalence and vulnerability. Vulnerability indicators in the IUU Fishing Index typically relate to things that are outside the control of countries to change, *e.g.* the size of the EEZ, and are hence generally less useful to gauge a country's performance in combatting IUU fishing. But some, such as whether foreign vessels are authorized to operate in the EEZ, do embody a measure of vulnerability, and are under the control of the coastal State.

For the indicators included in the IUU Fishing Index, the resulting tables allow us to gauge in what areas countries have made progress over the last two and a half years. Other indicators, in the bottom part of the following tables (dark blue row headers), were not part of the IUU Fishing Index. They are static and were covered in the questionnaire sent to IORA Members, and allow us to understand what other actions countries are taking in relevant domains of MCS to combat IUU fishing – or what the state of play in specific areas is (*e.g.* the size of the various fleets – a measure of *vulnerability*).

The tables below show performance and changes over time. To highlight performance:

- Improvement on an indicator over time is coloured in dark green
- Good performance on an indicator is coloured in green
- Lower vulnerability or risk on an indicator is coloured in light green
- Higher vulnerability or risk on an indicator is coloured in light red
- Poor performance on an indicator is coloured in red
- Regressive performance on an indicator over time is coloured in dark red
- Indicators not relevant to given countries are left un-shaded, marked "n/r"
- No data / no response



The data in the top part of each table (light blue row headers) enable us to gauge the status of specific indicators, as well as progress that has been made over the most recent two and a half years (roughly) – or regression. These are the ones sourced from the IUU Fishing Index.

The indicators reported in the bottom half (darker blue row headers) are static and enable us to further characterise the IUU and MCS situation of given IORA members in late 2020. These indicators

were sourced from a country questionnaire that was circulated to all IORA Members[9] in late 2020. Only seven countries responded to this call.

Given the limited response received from IORA Members to the questionnaire circulated under this study, the strategy to base a critical part of the assessments contained in this document on information sourced from existing material published elsewhere proved judicious. While some of the indicators in the lower part of the tables are published elsewhere also (3 out of a total of 16), and could be completed for all IORA Members, the majority of indicators (13 out of 16) could not and did require individual responses sourced from the circulated questionnaire.

Owing to the communication and data collection protocol implemented by the IORA Secretariat for this study, the author of the study could not directly communicate with the recipient/responding administrations to verify and discuss returns. However, some of the answers received were either incomplete, or clearly erroneous. In such cases, the author tried to reconstruct data from other sources, and references and notes to that effect are included within the tables.

The study spared no efforts in using the direct feedback provided from the 9 responding IORA Members to draw insights and lessons from these, with the aim that these might ultimately be applied to and benefit all IORA Members.

[9] France only joined IORA as a Member in late 2020, when the study was already underway, and is thus not included.

Table 3: Coastal State IUU & MCS indicators for IORA members

	ZAF	MOZ	MDG	SYC	MUS	COM	TZA	KEN	SOM	YEM	OMN	ARE	IRN	MDV	IND	LKA	BGD	THA	MYS	SGP	IDN	AUS
	WIO									NIO								EIO				
UNCLOS signatory	yes yes	yes yes	yes yes	yes yes	yes yes	yes yes	yes yes	yes yes	yes yes	yes yes	yes yes	no no	no no	yes yes	yes yes	yes yes	yes yes	yes yes	yes yes	yes yes	yes yes	yes yes
NPOA-IUU developed/ published	no no	yes yes	yes no	yes yes	yes yes	no n/a	no yes	no no[3]	n/a no[5]	no no[5]	yes yes	n/a no[3]	n/a no[3]	no yes	n/a no[3]	yes yes	no yes	yes yes	n/a yes	n/a no[5]	yes yes	yes yes
Coastal State member to all relevant RFMOs	no no[1]	yes yes	yes yes	yes yes	yes yes	yes yes	yes yes	yes yes	yes yes	yes yes	yes yes	yes yes	yes yes	yes yes	yes yes	yes yes	yes yes	yes yes	no no[1]	no no[1]	yes yes	yes yes
Foreign fleet operating in EEZ	yes yes	yes yes	yes yes	yes yes	yes yes	yes yes	yes yes	yes yes	yes yes	yes no	n/a no	n/a no	n/a no	no no	n/a no	no no	no no	no no	no no	n/a no	no no	no no
Foreign fleet VMS via national FMC	yes yes	yes yes	yes yes	yes yes	yes yes	yes yes	yes yes	yes yes	n/a yes[2]	n/r	n/r	n/r	n/r	n/r	n/r	n/r	n/r	n/r	n/r	n/r	n/r	n/r
Commercial dom. EEZ fleet VMS monitored	yes yes	yes yes	yes yes	yes yes	yes yes	n/a n/r	yes yes	yes yes	n/a no	no no	n/a no[4]	n/a no[5]	n/a no[3]	yes yes	n/a no[3]	no no	no no	yes yes	n/a yes	n/a n/r	yes yes	yes yes
National fleet: small-scale/ medium-large scale/ ABNJ (in ,000)	.12 .85 .015 [7]		44.2 0.07 0	.33 .21 .078	2 0.04 0.01									0.425 0.365 0 [8]		43.2 4.2 1.52	34.8 33.1 0		42.7 8.2 0.017		443 100 0.5 [6]	
Electronic logbooks in any domestic fisheries	yes		no	no	no									no		no	no		yes		yes	
VMS regulation / or provisions in basic law	REG		REG	BL	REG									BL		BL	no		BL		BL	
Max. penalty foreign f.v. operating in EEZ without license	€0.3m no jail / conf.		$0.9m no jail conf.	$1.4m no jail / conf.	€1k jail									€0.4m no jail / conf.		€0.8m jail	€1k jail conf.		€1.2m no jail / conf.		€6k jail	
Detected& sanctioned IUU cases in 2019 (small/medium/ABNJ)	10 3 0		0 0 n/r	0 0 0	0 1 0									0 4 n/r		448 86 22	0 99 n/r		0 0 0		0 0 0	

Note: Indicators covered in the IUU Fishing Index are covered in the first 6 rows. The two values listed report the mid-2018 (upper cell value) and December 2020 (lower cell value) state of play. “n/a” = value not available. “n/r” = not relevant. “REG” = through regulation. “BL” = through basic law.

[1] MYS and SGP are not members of WCPFC; ZAF is not a member of SIOFA. [2] https://mfmr.gov.so/en/2019/03/15/somalia-issues-fishing-licenses/ [3] Pramod, 2018 IUU intelligence reports [4] https://www.iotc.org/sites/default/files/documents/2018/11/IOTC-2018-SC21-NR19_-_Oman.pdf establishes only industrial vessels over 30m LOA are fitted with VMS, implying the entire coastal fleet would not be covered. [5] Educated guess [6] No fleet numbers were received, but merely “yes/no” answers. We tried to reconstruct these figures, which remain approximations. The CLAV lists 490 vessels authorized to operate under IOTC, WCPFC and CCSBT (http://clav.iotc.org/browser/search/). Published statistics put the entire fleet in the order of 543.8 thousand units in 2017. [7] Numbers received are incorrect. Actual fleet sizes are much larger. Sowman (2006) reported the existence of at least 29,200 subsistence fishers (*i.e.* small-scale). The CLAV, containing tuna vessels only, lists 96 vessels – most of which would be licensed to operate in the ABNJ, representing only a fraction of a much larger commercial offshore fleet. The IMO GISIS database lists 53 flagged fishing vessels built as of the year 2000 and equal or above 100GT (provides a partial picture of large-scale commercial vessels) [8] Numbers provided may contain minor errors. Some vessels – including reefers – are operating in the ABNJ, although this number may be limited.

Table 4: Flag State IUU & MCS indicators for IORA members

	ZAF	MOZ	MDG	SYC	MUS	COM	TZA	KEN	SOM	YEM	OMN	ARE	IRN	MDV	IND	LKA	BGD	THA	MYS	SGP	IDN	AUS
	WIO									NIO								EIO				
FAOCA signatory	no no	yes yes	yes yes	yes yes	yes yes	no no	yes yes	no no	no no	no no	yes yes	no no	no no	no no	no no	yes yes	no no	no no	no no	no no	no no	yes yes
HSVAR populated	n/r	no no	no no	yes yes	no no	n/r	no no	n/r	n/r	n/r	no no	n/r	n/r	n/r	n/r	no no	n/r	n/r	n/r	n/r	n/r	no no
UNFSA signatory	yes yes	yes yes	no no	yes yes	yes yes	no no	no no	yes yes	no no	no no	yes yes	no no	yes yes	yes yes	yes yes	yes yes	yes yes	yes yes	no no	no no	yes yes	yes yes
FAO Global Record populated	yes yes	no yes	no no	yes yes	no no	no no	no no	no yes[4]	no no	no no	no no	no no	no no	no no	no no	no yes	no no	yes yes	no no	no yes	yes yes	yes yes
IUU-listed fishing vessels	no no	no no	no 1	2 1	no no	no no	1 no	no no	no no	no no	no no	no no	no 2	no no	10 10	no 9	no no	no 1	no no	no no	3 11	no no
IUU carded/identified by EU or NOAA	no no	no no	no no	no no	no no	EU EU[1]	no no	no no	no no	no no	no no	no no	no no	no no	no no	no no[1]	no no	EU no	no no	no no	no no	no no
Comply with IOTC flag State CMMs[5]	no yes	yes yes	yes yes	yes yes	yes yes	yes yes	no yes	yes yes	n/r	n/r	no no	n/r	yes no	yes yes	yes yes	yes yes	n/r	no yes	yes yes	n/r	no yes	no yes
Flag fishing vessels operating in the ABNJ	yes	yes	yes	yes	yes	yes[2]	yes[2]	yes	no	no	yes	no	yes	yes	yes	yes	no	yes	yes	yes[2]	yes	yes
Flag State is considered a FOC (ITF[3])	no	no	no	no[3]	yes	yes	no[3]	no[3]	no	no	no	no	no	no	no	yes	no	no	no	no	no	no
Vessel registration & licensing hard linked	no		yes	no	yes		no							no		no	no		no		n/a	
Authorization to fish in ABNJ legislated	yes		yes	yes	yes		yes							yes		yes	yes		yes		yes	yes
VMS mandat. in ABNJ	yes		yes	yes	yes	n/r	yes		n/r	n/r		n/r		yes		yes	n/r		yes		yes	
AIS mandat. in ABNJ	yes		no	no	yes	n/r	no		n/r	n/r		n/r		yes		no	n/r		yes		yes	
ABNJ vessel marking scheme legislated	yes		no	yes	yes	n/r			n/r	n/r		n/r		yes		yes	n/r		yes		yes	

Note: Indicators covered in the IUU Fishing Index are covered in the first 5 rows. The two values listed report the mid-2018 (upper cell value) and December 2020 (lower cell value) state of play. "n/a" = value not available. "n/r" = not relevant.

[1] LKA was listed by the EU in 2012 and was delisted in 2016; Comoros was listed in 2015 and was red carded in 2017. [2] SGP: 1 carrier vessel in the IOTC RAV; TZA: 1 longliner on the IOTC RAV; COM: 1 liner on the SIOFA RAV [3] https://www.itfglobal.org/en/sector/seafarers/flags-of-convenience. SYC/TZA/KEN: not listed on ITF's list but have been flagging foreign fishing vessels without subjecting them to full-fledged flag State fishery controls. [4] Vessels listed on the Global Record are not congruent with the vessels authorized under IOTC.
[5] Based on IOTC 2019 Compliance Committee report tables.

Table 5: Port State IUU & MCS indicators for IORA members

	ZAF	MOZ	MDG	SYC	MUS	COM	TZA	KEN	SOM	YEM	OMN	ARE	IRN	MDV	IND	LKA	BGD	THA	MYS	SGP	IDN	AUS
	WIO									NIO								EIO				
Foreign fish. vessels call to port[1]	yes yes	yes yes	yes yes	yes yes	yes yes	yes no	yes yes	yes yes	yes yes	yes yes	yes yes	yes yes	yes yes	yes yes	yes yes	yes yes	yes yes	yes yes	yes yes	yes yes	yes yes	yes yes
PSMA signatory	yes yes	yes yes	yes yes	yes yes	yes yes	no no	no no	yes yes	yes yes	no no	yes yes	no no	no no	yes yes	no no	yes yes	no yes	yes yes	no no	no no	yes yes	yes yes
Designated ports with FAO	n/a no	n/a yes	yes no	yes yes	yes no	n/r	n/r	yes yes	n/a no	n/r	n/a no	n/r	n/r	yes yes	n/r	yes no	yes no	yes yes	n/r	n/r	yes yes	yes yes
Comply with IOTC PSM CMMs[2]	no yes	no yes	no yes	no yes	no yes	yes yes	no yes	no yes	no no	no no	yes yes	n/r	no yes	no yes	yes no	yes yes	no no	no yes	no yes	n/r	no yes	yes yes
Designated ports under IOTC PSM	yes	yes	yes	yes	yes	yes	yes	yes	yes	no	yes	n/r	yes	yes	no	yes	yes	yes	yes	n/r	yes	yes
Designated fishing ports enacted	yes		yes	yes	yes									yes		yes	no	yes			yes	
AREP procedure enacted (national)	yes		yes	yes	yes									yes		yes	yes	yes			n/a	
AREP procedure active (national)	yes		yes	yes	yes									yes		yes	no	yes			n/a	

Note: Indicators covered in the IUU Fishing Index are covered in the first 4 rows. The two values listed report the mid-2018 (upper cell value) and December 2020 (lower cell value) state of play. “n/a” = value not available. “n/r” = not relevant.

[1] This metric was updated using the GFW and *Vesselfinder* websites and seeking assistance from Trygg Mat Tracking (TMT) on selected countries, and are looking at the latest 6 months of port entries. If a single foreign vessel was detected, the answer is “yes”, else “no”

[2] Based on IOTC 2019 Compliance Committee report tables

3.2 Key findings on IORA Member performance in combatting IUU fishing

Section 3.1 provides important insights based on the tables contained therein. The top part of each table invariably presents a selection of key indicators from the IUU Fishing Index, reporting the original result published in 2019, and then the result obtained during this study in late 2020. The bottom section of each table is almost entirely dependent on country responses to the questionnaire circulated under this study and yields further detailed insights. In the three sections below (3.2.1; 3.2.2 and 3.2.3), key findings are invariably organized into these two parts, starting with the insights obtained from the IUU Fishing Index indicators, and their apparent evolution, and then moving to the more detailed country indicators sourced primarily from the questionnaires.

3.2.1 Coastal States

IUU Fishing Index indicators

- The top part of table 3 (first 6 rows) covers key coastal State indicators from the IUU Fishing Index. Only one of the 6 indicators is a *vulnerability* indicator (foreign fleet operating in EEZ), while the other 5 are *performance* indicators;
- Overall, the table shows that few semantic weaknesses existed, and continue to exist at the level of the selected key indicators;
- An overwhelming majority of States has signed/ratified/acceded to/accepted UNCLOS, signalling acceptance of the international regime guiding ocean affairs in general, including fisheries. However, this situation changes for flag States (below), when considering the fisheries-specific instruments that followed UNCLOS;
- Bangladesh, the Maldives and Tanzania have recently developed an NPOA-IUU, bringing to more than half the number of IORA countries that have now developed an NPOA-IUU. This signals awareness and resolve in assessing the national IUU fishing situation and to proactively addressing it. This is also the only coastal State IUU Fishing Index indicator covered in which substantial progress has been made over the last two and a half years;
- Regarding membership in relevant RFMOs, 19 out of 22 IORA coastal State Members are part of all relevant RFMOs in their capacity as coastal States bordering given ocean basins and RFMO areas of competence (AoC). Singapore and Malaysia are not members of the WCPFC, and South Africa is not a Member of SIOFA, even though these countries are bordering these respective ocean basins, their EEZs border the RFMO's AoC (Pacific Ocean and Indian Ocean respectively), and UNCLOS provides them with special rights and duties to found and participate in such RFMOs;[10]
- Foreign fleets operate in all IORA member EEZs in the WIO, while none do in either NIO or EIO country waters. This finding underlines one of the most fundamental differences between the WIO on one hand, and the NIO and EIO on the other. Foreign fleets embody an element of

[10] Article 63 - *Stocks occurring within the exclusive economic zones of two or more coastal States or both within the exclusive economic zone and in an area beyond and adjacent to it*

heightened IUU risk (*i.e. vulnerability*) in the EEZ. The risks associated with certain types of foreign fleet infringements are thus higher in the WIO than in the NIO/EIO. On the same token, all of the WIO countries – including Somalia – report that foreign fleets operating in the EEZ are monitored through VMS and a national FMC, signalling that the basic MCS tool for monitoring these fleets is a given. However, it is known that some of the WIO IORA members have limited human resources, patrol platforms and/or other operational means to drive compliance – resulting in an overall more mitigated finding for the WIO at this level;[11]

- With regards to VMS monitoring of the domestic commercial fleets in the EEZ, all IORA countries in the WIO and EIO do – except for Somalia and those not operating commercial fleets. On the other hand, in the countries of the NIO, the situation is exactly the opposite, and where only the Maldives is monitoring its fleet. This may point to a general lack of prioritization regarding the subjecting of national commercial fleets to able and modern monitoring frameworks in these countries and reflects other flag State weaknesses discussed further below. The lack of monitoring infrastructure does not only impact MCS performance but is also known to limit fisheries science and research.

Other indicators

- Fleet sizes vary enormously between countries – and with this the relative ease or difficulty to monitor these. Fleets can be quite modest in the case of small islands, such as Mauritius or Seychelles, with a few thousand units in total (or less). In other large countries, fleets can be very large, as in the case of Indonesia – ranging in the hundreds of thousands of units. Singapore is thought to operate very few units in total, almost all of which would be small-scale, owing to its very limited EEZ, and the absence of an international fishing fleet. The challenge for countries like Indonesia, Malaysia or Bangladesh is the development of legal frameworks to regulate the operations of vast small- and medium-scale fleets AND to ensure that these frameworks are enforceable and complied with. For this, rules must be practical and easy to enforce,[12] and enough properly equipped and trained inspectors must be at the disposal of enforcement agencies to ensure effective enforcement;
- E-logbooks characterize modernity of fisheries management and monitoring systems. It does indicate that a conscious effort is being made to ensure that data relevant to fisheries scientists, managers and compliance officers is being collected. Especially in fisheries with vast fleets, the collection of paper-based records has very limited, if any potential, in contributing

[11] The regional fisheries surveillance programme (PRSP) funded by the EU to the tune of EUR12 million, bringing WIO costal States together under the auspices of the Indian Ocean Commission, came as a direct answer to this particular situation and challenge. While the main project finished in 2014, various initiatives to continue the grouped regional deployment of fisheries inspectors aboard patrol vessels and maritime aircraft of individual countries have continued since. https://www.commissionoceanindien.org/portfolio-items/programme-regional-de-surveillance-des-peches/

[12] In Thailand, the fisheries law provided in the past that illegal fishing gear could be legally kept aboard fishing vessels, and that such illegal gear had to be in active use in the water in order for an officer to establish an offence. That exemplifies an unpractical regulation which is extremely difficult to enforce, since it requires active sea patrolling as a minimum to enforce the rule. An alternative, practical and easy-to-enforce rule is to regulate that illegal fishing gear kept aboard a fishing vessel constitutes an offence.

to fisheries management and fisheries law enforcement actions. Of the nine countries that responded to the survey, only three indicate that electronic logbooks are in place in at least some domestic fisheries. Some countries operating large medium-scale and ABNJ fleets do not have such means in place today – indicating that a lot of progress remains to be made in modernizing basic monitoring and reporting frameworks, serving both the science and compliance aspects of the fisheries management framework;

- It is of interest, in the same context of e-logbook monitoring covered under the previous point – to look at how e-logbooks are matched by VMS monitoring of the domestic commercial fleets, covered in the last bullet of the foregoing sub-section. The two responding EIO IORA MS (Malaysia and Indonesia) match e-logbooks with domestic VMS coverage, as does South Africa in the WIO. This signals the adoption of advanced, modern forms of fisheries monitoring. In the NIO, Sri Lanka and Bangladesh report that the absence of e-logbooks is coupled with an absence of VMS in the domestic commercial fisheries – signalling absence of modern, electronic forms of monitoring in these important fisheries altogether. Intermediate solutions are reported by Madagascar, Seychelles, Mauritius and the Maldives, where e-logbooks are absent, but VMS is applied to domestic commercial fleets;
- With regards to VMS, still, the legal framework regulating VMS was assessed, in order to gain a sense of the level of detail to which VMS as a monitoring tool is established in legal frameworks. This is important from an electronic evidence point of view, and the admissibility of such evidence in a court of law. Absence of a dedicated VMS regulation is a proxy for a lack of legal standing and admissibility of electronic evidence derived from VMS systems. Of the nine responding IORA MS, only a single country – Bangladesh – neither operates VMS, nor does it refer to it in its basic law. All other eight respondents operate VMS, and make provision for VMS in their basic law, and 3 out of 4 WIO respondents have developed a VMS-specific regulation, deemed to establish precisely how VMS is to be operated, and how the evidence collected through the system may be used in legal proceedings;
- A foreign vessel fishing in the EEZ of a coastal State without authorization is generally regarded as the most serious form of infringement – often referred to as "*pirate fishing*". The maximum penalty for this infringement generally sets the tone for penalty levels in general – *i.e.* including those applicable to domestic operators. Only a single country is deemed to have in place a penalty scheme that is fully enabling, Sri Lanka – with a convicted foreign offender facing a penalty of up to €800k, and a jail term, is stiff – while the confiscation of the vessel is not foreseen. In all other countries the mix of sanctions presents weaknesses. The pecuniary sanction may be high (*e.g.* USD1.4 million in the Seychelles and Malaysia), but then there may be no criminal liability provisions (leading to imprisonment of perpetrators), or confiscation of vessel/implements. The weakest provisions of all are found in South Africa and Maldives, where the absence of detention of perpetrators, or confiscation of implements is coupled with weak fines not exceeding €400k. This signals an IORA-wide weakness in terms of deterrent effect generated by current penalty schemes;
- Finally, it is useful to assess the number of sanctions issued in the latest full year across the three assessed fleet segments. This is one of the most relevant metrics to assess the effectiveness of the State's action to combat IUU fishing. Of the nine respondents, 4 indicate that not a single fine was issued in any of the fleet segments. This includes both EIO

respondents with huge fleets in all segments, and three of the 4 WIO respondents with relatively smaller – but still important fishing fleets. It has to be noted that it is generally correct to posit that "0" sanctions over an entire year, and a fleet segment hundreds or thousands of vessels strong translates into a semantic absence of policing and enforcement. South Africa and Bangladesh signal the existence of a very modest measure of enforcement, and Sri Lanka – the country with the most biting penalty framework – is the only country reporting to detect and sanction infringements across all three fleet segments, and projects the image of a nation committed to enforcing the fisheries law.

3.2.2 Flag States

IUU Fishing Index indicators

- The top part of table 4 (first 7 rows) covers key flag State indicators from the IUU Fishing Index. Overall performance in the flag State domain is much more mitigated than the overall more solid coastal State performance;
- While just over half the WIO members have signed up to the FAO Compliance Agreement, less than 1 in 4 have signed the Agreement across the NIO and EIO membership. This signals a clear lack of commitment to the international regime of fisheries management and enforcement on the high seas, the disciplining of national fleets fishing on the high seas, and the collaboration with other signatory partners in this domain;
- In addition to the preceding point, only a single IORA member – Seychelles – is submitting updated information of its high seas fleet to the FAO High Seas Vessel Authorisation Record (HSVAR),[13] a statutory requirement under the Agreement;
- With regards to the ratification/acceptance of the United Nations Fish Stock Agreement (UNFSA), the emerging picture is the opposite to that of the FAOCA. While just over half the WIO member have accepted the UNFSA, 75% have done so in the NIO region, and 60% in the EIO region. When compared to the support given to the FAOCA, this may signal a more profound difference in focus between WIO members on one hand, and NIO and EIO members on the other, with WIO members having a more balanced stance between management and compliance of high seas resources, while NIO and EIO members seemingly give more importance to supporting the international framework for the management of transboundary and straddling resources, while turning a blind eye to high seas compliance;
- The population of FAO's Global Record of fishing vessels is the domain in which most progress was made, with the number of IORA members now supplying data having doubled (from 4 to 8) since 2018, resulting in more than 1 in 3 countries now supplying the data. NIO is the poorest performer in this domain, with only one in eight countries – Sri Lanka – supplying these data, while the EIO is the strongest performer (4/5 supplying data);

[13] See: http://www.fao.org/fishery/collection/hsvar/2/en#table1. Belize and the Seychelles are the only signatories that still update their information on the HSVAR, emerging as global champions in transparency, and in honouring their commitments at this level.

- With regards to vessels listed on IUU fishing vessel lists, the situation has deteriorated substantially across all regions. The number of countries flagging such vessels has almost doubled to seven IORA members over the last two and a half years, with only one WIO member having been removed from the list (Tanzania) over the period. The numbers of vessels listed indicate a geographic prevalence of this challenge in the NIO and EIO sub-regions, and are overall indicative of insufficient and/or ineffective flag State controls;
- With regards to countries identified or carded by NOAA or the EU, the EU represents the only likely source of such a challenge.[14] The situation improved substantially across the IORA region, with the countries identified by the EU dropping from two to just one. The Comoros remain red-carded, while Thailand's "yellow card" was removed in early 2019;
- Regarding compliance with IOTC flag State rules, the tabulated results may be misleading, as the IUU Fishing Index rates compliance with flag State rules of all RFMO's a State is a party to – and the result was not a yes/no answer, but a sliding result from 1 to 5. These results have been re-interpreted into a yes/no result here, and the IOTC scores, which are also located on a gradient, have also been re-interpreted as a yes/no. Therefore, results from the IUU Fishing Index and compliance with IOTC flag State measures are not directly comparable. However, they allow to gauge trends in compliance with flag State rules in general in 2016-2018, and IOTC flag State rules in 2019 – for individual IORA members.[15] It arises that overall compliance with flag State rules at IOTC is high, with only two countries falling substantially short of expectations. Both those countries are in the NIO region. The most substantial progress has been made in the EIO region, where 3 out of 4 States had a negative score under the IUU Index (based on 2016-2018 reference records) but received a favourable IOTC appraisal in 2019;
- With regards to relevant flag State RFMO membership (not represented in the related table), it is important to highlight that Singapore flags one reefer ("Chitose"; IRCS: 9V6110), with active authorizations under CCSBT, ICCAT and IOTC.[16] While the reefer is expected to comply with the differing and complex transhipment rules of three distinct RFMOs, incumbent upon the flag State, Singapore is neither a contracting party (CPC), nor a cooperating non-contracting party (CNPC) of any of those Commissions. This situation is enabled by a gap in the regulatory substance of most tuna RFMOs, allowing reefers flying the flag of non-cooperating non-contracting parties (NCNCPs) to operate in their respective AoCs. A similar situation arises with Singapore as a market State under the CCAMLR *Dissostichus* Catch Documentation Scheme. As an importer of toothfish, Singapore has recently adopted a position as a CNCP with CCAMLR to collaborate and comply with the scheme, applying its

[14] Hosch (2016) showed that US identifications were limited by US law to neighbouring countries, and countries operating in fisheries that can directly challenge or infringe upon US interests. With the US largely absent from the Indian Ocean, the likelihood of a US identification of an IORA member is very low.
[15] Note that this measure does not apply to IOTC non-Members Singapore and the United Arab Emirates
[16] See the Consolidated List of Authorized Vessels (CLAV) operated by Tuna RFMOs: http://clav.iotc.org/browser/search/

strictures to its market.[17] It would be opportune for Singapore – as a flag State – to consider adopting the same stance within RFMOs where its reefer operates.[18]

Other indicators

- A first and most important element of IUU risk is the operation of flagged vessels in the ABNJ. Only 4 out of 22 IORA MS do not flag vessels operating beyond the EEZ. These are Somalia, Yemen, the United Arab Emirates and Bangladesh – indicating that these countries are concentrated in the NIO (even if Somalia is formally counted towards the WIO);
- Three IORA MS are Flag of Convenience (FOC) States according to the ITF.[19] These are Mauritius, the Comoros and Sri Lanka. This indicates that semantic weaknesses exist at the level of these jurisdictions in how flag State responsibilities in general are administered –likely to translate into flag State performance shortfalls in the domain of fisheries also. Three more States are singled out in table 4 as being problematic. These are the Seychelles, Tanzania and Kenya, where foreign-owned fishing vessels are also registered, and are known not to be subjected to full-fledged flag State oversight mechanisms. The same issue is likely to apply to Mozambique also.[20] This phenomenon is clearly more concentrated on the WIO side of the IORA region;
- Critical to the above issue is the hard linking of fishing vessel registration and the subsequent issuing of an authorization to fish. The idea is that vessels should never be allowed to register (flag) in a jurisdiction, unless the fisheries administration is consulted first, and is willing and able to issue such vessel a fishing authorization. Of all the countries having provided feedback, only a single country has a domestic legal framework in place that clearly establishes this principle. This is Mauritius, doing so under its 2007 Fisheries and Marine Resources Act.[21] Madagascar provides similar minded, but weaker provisions under its 2015 Act on Fisheries and Aquaculture – falling short of a preliminary qualified authorization from the Minister of Fisheries before registration may occur. The fact that this link between registration and authorisation remains the exception, rather than the rule, implies that some of the most fundamental control mechanisms suggested in the Code of Conduct for Responsible Fisheries

[17] Source: https://www.ccamlr.org/en/ccamlr-xxxvii/35
[18] The United Arab Emirates, the other IORA Member that is an IOTC NCNPC, does not flag reefers or vessels known to operate in the AoC of any RFMO worldwide.
[19] FOC vessels are defined by ITF as a ship "*that flies the flag of a country other than the country of ownership. For workers onboard, this can mean: very low wages; poor on-board conditions; inadequate food and clean drinking water; long periods of work without proper rest, leading to stress and fatigue. By 'flagging out', ship owners can take advantage of: minimal regulation; cheap registration fees; low or no taxes; freedom to employ cheap labour from the global labour market. ITF believes there should be a 'genuine link' between the real owner of a vessel and the flag the vessel flies, in accordance with UNCLOS. FOC registries make it more difficult for unions, industry stakeholders and the public to hold ship owners to account. In many cases, the registries themselves are not run from the country of the flag. Globalization has helped to fuel this rush to the bottom. In a competitive shipping market, FOCs lower fees and minimize regulation, as ship owners look for the cheapest way to run their vessels*."
[20] One of the most important of these lacking oversight mechanisms is when a flagged vessel never sails into a national port, where it can be subjected to a pre-registration inspection, or to regular ad-hoc routine inspections. It is extremely difficult – or outright impossible – for fisheries authorities to exert functional oversight over such vessels.
[21] See section 27(1).

remain elusive across the IORA region, and continue to fuel semantic weaknesses in the fisheries control framework;

- A positive development is that all flag States mandate the carrying of VMS transponders on the high seas, and that a specific authorization to operate on the high seas is mandated in the national regulatory framework – for all countries having provided feedback. The same applies to the legislation of the vessel marking schemes for vessels operating in the ABNJ – with the exception of Madagascar.[22] This result is fuelled in large measure by IO-based RFMOs and their regulatory frameworks, providing for these elements to be put in place, while the 1984 FAO Standard Specifications for the Marking and Identification of Fishing Vessels provide the RFMO- and nationally-adopted regulatory basis in most cases;
- In addition to VMS transponders, modern national fisheries MCS frameworks now sometimes also mandate the carrying of AIS units. AIS is an anticollision at sea system that broadcasts the identity, position, heading and speed of a vessel on a permanent basis – and at much more frequent intervals than VMS, for only a minute fraction of the costs. AIS has the advantage that everybody (literally) can monitor the movement of fishing vessels fitted with AIS, making it a highly potent mechanism to deter fishing vessels from committing a number of potential infringements – including fishing illegally in third party EEZs or in RFMO AOCs without the necessary authorizations. Amongst the respondents, a number of flag States, all of which present FOC-characteristics discussed above, do not mandate the carrying of AIS in the ABNJ. These include Madagascar, Seychelles, Tanzania and Sri Lanka. While the Maldives reports to require AIS, its EEZ is one of the IO domains where hardly any AIS signal can ever be detected – being emitted almost exclusively by foreign fishing vessels on such occasions. This is indicative of the fact that Maldives-flagged vessels in general do not carry AIS transponders. Overall, important flag States in the EIO – including Indonesia and Malaysia – lead the way in AIS adoption and good practice, mirrored by countries like South Africa and Mauritius in the WIO.

3.2.3 Port States

This section should be read in conjunction with Gaudin (2021)[23] published under the same technical assistance initiative. That report provides a detailed and in-depth assessment of port State measures in place and related needs to further improve PSMA implementation across the IORA region.

The elements following below were collected and assessed from a comprehensive MCS point of view, and compliment substance covered in the above-mentioned report.

[22] Section 58 of the 2015 Fisheries and Aquaculture Act provides that the 1984 FAO vessel marking standard applies, but is limited to vessels fishing in domestic waters, and excludes vessels operating in the ABNJ.
[23] Gaudin, C. (2021) *Assessment of the Capacity Needs (Human and Institutional) and the current Level of Implementation of Port State Measures (PSM) in the IORA Region*, Report No. 5, COFREPECHE. 126 p

IUU Fishing Index indicators

- The top part of table 5 (first 4 rows) covers key port State indicators from the IUU Fishing Index. All of these are port State *response* (or performance) indicators;
- There is only one IORA member that generally does not receive port visits by foreign vessels, namely Comoros. Iran follows closely, receiving less than a dozen visits a year;
- The above implies that the majority of IORA Members – including Iran – ought to subject their port State control framework to the strictures of the PSMA 2009. While 7 out of 9 (78%) WIO IORA Members have signed up to the PSMA, only 4 out of 8 (50%) have done so in the NIO, and 3 out of 5 (60%) in the EIO. While a non-signatory like Comoros is less critical, owing to the normal absence of foreign fishing vessel movements in and out of its ports, the PSMA is of critical importance to countries such as Singapore, Malaysia or India – for reasons that generally vary between these countries;
- Bangladesh is the only IORA Member that ratified the PSMA within the last 3 years;
- The PSMA requires signatories to inform FAO of their designated ports and provide contact points.[24] Of those countries that are parties to the Agreement, only half have done so to date. In this domain, EIO IORA Members come to the fore as PSC champions, with all signatories also having submitted their information to FAO, while only 1 in 4 (25%) has submitted in the NIO group, and 3 out of 7 (43%) in the WIO group. The latter poor results indicate that PSMA ratification is not yet resulting in national implementation of PSMA rules at the time of writing – including designation of ports through national legal instruments;
- Regarding compliance with IOTC PSM rules, the results obtained may be partly misleading, as the IUU Fishing Index rates compliance with PSM rules of all RFMO's a State is a party to – and the result was not a yes/no answer, but a sliding result from 1 to 5. These results have been re-interpreted into a yes/no result here, and the IOTC scores, which are also located on a gradient, have also been re-interpreted as a yes/no. Therefore, results from the IUU Fishing Index and compliance with IOTC PSM measures are not directly comparable. However, they allow to gauge trends in compliance with PSM rules in general in 2017/2018, and IOTC PSM rules in 2019 – for individual IORA members;[25]
- With regards to the above, it arises that overall, PSM compliance of IORA Members is high, with 16/20 (80%) port States being largely in compliance, and 12 of which (75%) perform better than their overall and wider IUU Fishing Index score raised in 2018;
- The mismatch between the non-designation of ports under the PSMA (and the submission of information to FAO) and the positive score with the IOTC PSM rules (*e.g.* South Africa) resides in the fact that countries are often found to designate ports at RFMO level in the absence of regulatory national diplomas, generally rated as sufficient and compliant by RFMOs, while the

[24] The FAO platform for designated port information submitted to FAO under the PSMA can be accessed here: http://www.fao.org/fishery/port-state-measures/psmaapp/?locale=en&action=qry
[25] Note that this measure does not apply to IOTC non-Members Singapore and the United Arab Emirates

designation of ports with FAO is generally based on regulatory substance – and thus more onerous to achieve.[26]

Other indicators

- In 2010, IOTC enacted its CMM 10/11 on port State measures, thus preceding the entering into force of the PSMA by 6 years. It was updated in 2016 (CMM 16/11). IOTC is the RFMO with the most advanced PSM scheme globally – including an electronic PSM interface to be used by its Members to manage port entries by foreign fishing vessels. Only two IORA/IOTC members have not yet designated their ports under the IOTC framework – both NIO countries;
- A little studied, yet extremely important PSM aspect relates to the legal status of designated ports, and whether these have been formally designated under national legislation. In the absence of national legal substance on these designations, challenges and litigations as to their very existence and legal standing could arise. Of the nine respondents, eight indicate that this has been done. However, it is not always entirely clear, whether question 13 (see Annex II) has been interpreted correctly in all cases, and more legislative efforts than indicated here may remain necessary. Respondents sometimes feel that an act of designation under an RFMO is equivalent to a national legislative act – which is not the case in most legislative systems;[27]
- A related, and important aspect is the legislation and implementation of the procedures relating to the advanced request for entry into port (AREP), which is a standard provided in the PSMA (article 8) and enacted through IOTC's CMM 16/11 (article 6). A similarly important aspect here is that AREP procedures should apply to all foreign vessels entering port, not only those falling under an RFMO PSM-scheme, such as the one of IOTC. Of the nine respondents, eight indicate that AREPs are legislated, while one did not respond to the question. This is also a very high percentage, and in the absence of legislative references, it is difficult to establish whether this reflects the actual situation;[28]

[26] Hosch *et al*. (2019) formally established and discussed the mismatch between designated ports at RFMO level, and the lack of PSMA ratification and/or submission of information to FAO, generally found to be grounded in the absence of national legislation formally establishing the status of designated ports. This resulted in the recommendation to FAO that national legislation establishing designated ports should be referenced on FAO's PSMA online database for the sake of clarity.

[27] Note that Mauritius, for instance, had been found not to have yet enacted its designated ports in the Hosch *et al.* (2019) study. Hosch notes in Supplement 1: "*Of the eight PSMA signatories, only 25% have formally designated their ports for foreign vessel movements through national (RFMO-independent) legislation. This is likely representative of the global situation, indicating that a lot of progress in this domain remains to be made*."

[28] In the above referenced supplement to the 2019 article, Hosch et al. found that: "*For nine out of fourteen ports (64%) it was possible to establish that some form of an AREP system was in place. […] A number of countries have put in place AREP systems, in line with one of the core PSMA provisions (article 8). This particular mechanism has been adopted by countries that have signed the PSMA, as well as countries not having signed it (e.g. China and Marshall Islands). Conversely, for other countries, having signed the PSMA, no evidence could be found that an RFMO-independent AREP system was in place (e.g. Korea and Turkey). It remains unclear, in the latter case, whether such results are due to the difficulties of accessing information relating to mandatory schemes, or whether such schemes are indeed still absent. This serves to underline the dearth of nationally hosted and actively publicized PSM information in general. Overall AREP systems have already been adopted to a large degree, owing also to the fact that many of these systems predate the PSMA, and have been a part of standard practice in a number of countries for a long time.*"

- Of the eight countries indicating that AREP-related legislation is in place, only a single country indicates that it is not yet being actively implemented – while the same responding country did also not respond to this question. Overall, all these countries are not only members of IOTC, all of them are also PSMA signatories. This indicates that overall, PSMA and AREP procedures seem to enjoy a relatively consistent and high degree of State support and implementation;
- The outlier in table 5 is Singapore, which operates a truly important international fishing port with high numbers of foreign fishing vessel calls, and is neither a PSMA signatory, nor an IOTC member, and has not designated any ports under either FAO or IOTC frameworks. However, since Singapore manages to collaborate with CCAMLR under the toothfish CDS and related port State control measures, it should feel encouraged to play a more proactive part for all other PSM-related controls too.

3.2.4 Key constraints in developing effective national MCS system

Figure 1 summarises all constraints reported by the responding countries with regards to developing more effective national MCS systems – in relative numbers.[29]

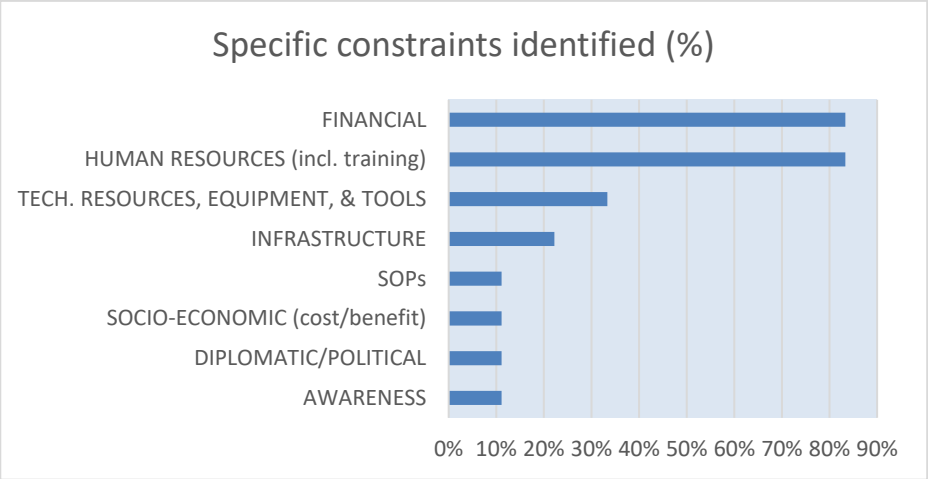


Figure 1: Key constraints identified by IORA MS to develop more effective MCS systems

The results from this part of the feedback are unsurprising in their major categories but warrants closer scrutiny on the less reported constraints.

- The most obvious and ubiquitous two constraints identified by more than 80% of all respondents are limiting financial resources, and the lack of sufficient and adequately trained MCS staff. It is essential to underline, that MCS – through its operational nature setting out to implement and enforce fisheries management in the real world, in the ocean, the air the ports and the markets – is THE segment in the fisheries management triangle (the latter composed of a) science, b) management, c) enforcement) that requires the most substantial amounts of

[29] Note that the "institutional constraints" identified by a single country – in addition to technical constraints – have been distributed equally between financial and human resources constraints, and the lack of training identified by two countries has been assimilated to human resource constraints, which thus encompass both the number of available staff, and their technical professional capacity.

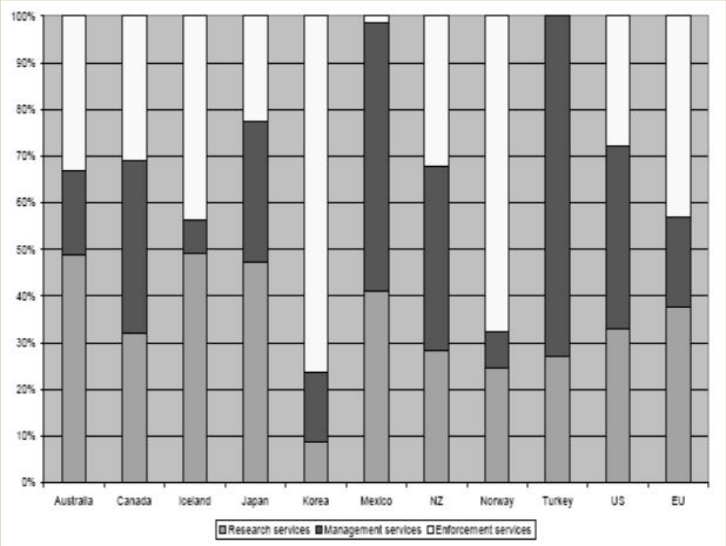


Figure 2: Relative budgetary allocations within the fisheries administration.

Source: OECD

financial and human resources. While this study did not attempt to quantify the relative resource allocations to the three basic pillars of the fisheries management apparatus in each country,[30] the results seem to clearly indicate that the MCS pillar is in general under-funded throughout the majority of IORA Member States. Figure 2 shows the relative amounts of fisheries budgets invested in these three pillars. It appears that countries with effective MCS systems at the turn of the century were investing between 33 and 66% of their entire fisheries budget on MCS. While this metric has neither been sampled nor assessed in this study, IORA MS are encouraged to assess their own situation, and ensure it does not reflect the situation of Mexico or Turkey two decades ago (see Figure 2). Those are the typical situations in which MCS effectiveness is trending towards nil, owing to an almost complete lack of resources and absence of prioritization, and resulting in an absence of deterrent effect.

- This first finding is followed by a third and a fourth item (Figure 1), which are the technical resources, tools and equipment needed to effectively implement MCS operations – and related infrastructure. These are, in many ways, but an extension of the financial constraints noted above, and feed the same narrative. Overall, this projects an image – reflecting global trends – that MCS in general tends to still evolve on the fringes of budget allocations in fisheries management, when in fact, it is the function that requires most of all of them – owing to its operational nature.
- The lack of standard operating procedures (SOPs) are a continuation of human resource constraints and technical capacity, while the mention of socio-economic considerations, looking at the cost/benefit equation of enforcement actions – relative to the social and economic value of the fisheries as a whole – is another financial and economic perspective adding to the one discussed above. What is the value of a nation's fisheries, and how much can, and should a State invest in its management (including enforcement)? Suffice to say,

[30] Most countries are not in a position to provide such figures, as budgets are not allocated in a way that would make this rendering of figures straightforward.

considering the above, that this answer has got to be sought for the fisheries management apparatus in its entirety, and that MCS must be sufficiently endowed within that framework to ensure that the framework as a whole can be effective in achieving its objectives. It is of essence to view MCS as a part of the whole management framework, and to not excise it as a costly element from it; the three pillars stand and fall in unison.

- It is interesting to note that "awareness" and "diplomatic/political" considerations were also mentioned. These are much more sensitive, often remain unspoken, AND are known to exist, and exert serious amounts of pressure on MCS operatives not to act and not to execute their functions for reasons that are entirely unrelated to capacity constraints – but are rooted in the domain of "fisheries diplomacy" and politics. These often relate to master-servant relationships, where economically and socially disadvantaged States are made to close their eyes with regards of infringements perpetrated by vessels and fleets flying the flags of economically dominant States that use their financial and economic clout to protect their operators from prosecution for alleged offences (and risking having fishing vessels becoming IUU listed). One critical step in overcoming this type of constraint is to practice transparency with regards to detected infringements, evidence, proceedings and outcomes.

4. Trends in IORA Member performance combatting IUU fishing

This section investigates some of the more obvious trends that are arising from the statistics put together within the remit of this assessment.

4.1 Summary of changes to IUU Fishing Index Indicators since 2018

Obvious and important changes that have taken place since 2018, when looking at the IUU Fishing Index in 2018, and where countries stand today, can be summarised as follows:

- Coastal States have made progress in developing NPOA-IUUs – signalling that there is a political commitment to accepting IUU fishing as an issue and assessing at the level of the state as to where the risks lie, and how it can best be addressed. The region lagging most behind in this regard – surprisingly – is the WIO, with 5/9 countries still not having developed an NPOA-IUU – against 4/5 having done so in the EIO;
- At flag State level, there has been movement in several metrics, not of all were positive. Positive is the fact that the FAO Global Record has been increasingly populated, which is a good trend regarding flag State transparency. The number of countries populating the record has nearly doubled, going from 5 to 9. WIO and EIO are leading the charge – with the latter outperforming the former – while the NIO remains far behind, with only a single country out of eight, Sri Lanka, having decided to populate the Record in the last three years;
- On the negative side, the number of IUU listed vessels has increased, both in terms of vessel units, as well as number of flag States listed, going from a total of 16 vessels and 4 countries in 2018 to 25 vessels and 7 countries in 2021. Countries with listed vessels are more or less equally spread around the IO rim, with India, Sri Lanka and Indonesia – three countries with large fleets – having the highest numbers of listed vessels. In some cases, the increase in listings owes to an openness of the flag State to assist in identifying and listing nationally flagged offenders. This has the effect of projecting a poor flag State image but may in fact owe

to a more recent dynamic that seeks to weed out and seriously impair the position of rogue operators;

- The above implies that the reading of IUU vessel lists should not be done in abstraction of understanding whose actions have led to the IUU listing. If IUU listings have been generated by the flag State itself, it should signal a very strong commitment by the flag State to identifying and sanctioning offenders. Unfortunately, this element of information is not normally provided in IUU vessel listings;
- A single IORA country was red carded by the EU, while another had its yellow card removed. In the case of the Comoros Islands red card, it is again a country with many inherent weaknesses and with no fish trade with the EU that gets trade sanctioned. This trend has been described elsewhere and does not seem to be entirely footed in international fisheries law enforcement considerations;[31]
- The most conspicuous improvement in flag State matters is compliance with IOTC flag State measures – a result obtained within the limitations discussed higher above. This development is very positive, and in this domain, it is also but a couple of NIO countries – one with regressive performance – that are part of the weaker elements within the IORA community.

4.2 Geographically embedded trends

As stated above, IORA is made up of a great diversity of countries – continental and island States – distributed across several very different world regions and continents (Africa, Middle East, Asia, South East Asia and the Indo Pacific region). In addition to this, the general dynamics in how fisheries have evolved, and are being operated today across these sub-regions vary enormously. This section serves to highlight some of these key differences, and how they impact MCS.

Foreign access

The most important difference established for coastal States in table 3 – row 4 – is that all WIO States[32] allow foreign fleets to operate in their EEZs, while none of the NIO and EIO States do. This difference is of structuring importance, as it hints at how offshore resources are exploited. While WIO States in general[33] have little developed offshore commercial fishing fleets (especially those of the truly "domestic" denomination – *i.e.* full domestic ownership of the vessel, the operation, and the company), NIO and EIO States have developed their fleets and industry over time – to varying degrees – and tend to harvest their EEZ resources themselves. The exact make up and importance of national commercial offshore fleets vary massively between these countries. The interplay between the coastal State and foreign flag States seeking access to EEZ resources – an issue requiring an inordinate amount of attention (and MCS resources in the WIO) – is a lot more limited in the NIO and the EIO, generally

[31] See Hosch, G. (2016)
[32] South Africa authorizes foreign fishing in its EEZ in exceptional cases, but only under charter or joint venture agreements with a national fishing rights holder. https://www.gov.za/services/fishing-permits/foreign-fishing-vessel-licence
[33] Ibid

confined and limited to combatting forms of (unauthorised) pirate fishing, a lot of which is of the straddling type, where masters decide to go pillage the resources of their neighbours. This basic set of circumstances fundamentally distinguishes the WIO from the NIO/EIO and requires an often fundamentally different approach to MCS. It entails, that – in general and within the mix of coastal and flag State measures – coastal State measures have a lot more weight in the WIO, while flag State measures have a lot more weight in the NIO and the EIO.[34]

It should be noted also in this context that the overall distribution of tuna resources across the Indian Ocean is skewed towards the West, and that this is one of the fundamental drivers as to why the situation of international fleets seeking access primarily in the WIO EEZs is what it is.

VMS adoption

Combined with the above is the fact that VMS adoption was a lot faster in the WIO, owing to the need to monitor foreign fishing vessels in the EEZ. While all WIO countries report to monitor their domestic fleets within the EEZ by VMS, only a single one in the NIO reports on doing the same (Maldives). VMS adoption in the WIO domestic fleets was clearly driven by the presence of foreign fleets and the needed technological solutions to monitor them – later extended to domestic vessels. The big fishing nations in the EIO (Thailand, Malaysia, Indonesia and Australia), all of which boast high seas fleets, underwent the same dynamic, but primarily driven by the needs to monitor their own vessels operating on the high seas.

International Instruments

The above dynamic may also explain to a large degree why the FAO Compliance Agreement, seeking the compliance of fishing vessels on the High Seas with international norms and rules, is a lot more endorsed in the WIO (the *de facto* custodians of the largest share of the transboundary tuna resource), while the UNFSA, seeking collaboration in the domain of managing and exploiting straddling and transboundary stocks, is of higher importance to NIO and EIO States – who (in general) have a lot less of that type of resource straddling their own EEZs.[35]

Port State weaknesses, and others

At the port State level, no major geographic trends are detectable, except for a general weakness of NIO States in port State matters. The NIO contains the smallest fraction of PSMA signatories (only one-in-two has signed the PSMA). The Near East, containing many of the NIO States, was singled out in the Hosch et al. (2019) study as the weakest region globally with regards to combatting IUU fishing in its ports, embodying the highest risk to facilitating IUU fishing – through omission primarily, rather than active facilitation. This same softness is detected at the flag State level with the NIO virtually absent as a contributor to the Global Vessel Record, as discussed above – and these elements may signal an

[34] It is pertinent to add/note that port State measures are of equal importance across the IORA region.
[35] In 1995, the Code of Conduct for Responsible Fisheries posited in article 8.2.6: "*States not party to the Agreement to Promote Compliance with International Conservation and Management Measures by Vessels Fishing in the High Seas should be encouraged to accept the Agreement and to adopt laws and regulations consistent with the provisions of the Agreement*." Only 8 out of 22 IORA MS have ratified/accepted the Agreement to date, 5 of which are WIO countries.

overall weakness of NIO countries (in general) to prioritize MCS and fisheries law enforcement. This is reflected in table 2 in the regional mean IUU Fishing Index scores, where the NIO obtains the overall poorest scores of the three IO regions monitored.

However, when looking at port State weaknesses specifically, Singapore (in the EIO) is arguably the most important port State in the IORA group, when considering that its roles as coastal and flag State are very limited. Singapore has the weakest port State score in the IUU Fishing Index (see table 2) – for good reason. Especially with regards to IOTC, and modern fisheries-related port State measures and controls in general, Singapore has the opportunity to become a lot more proactive, and to improve the handling of its responsibilities and commitments in this domain.

Flag State weaknesses

The data show that FOC State issues have a more prominent profile in the WIO. This does in part owe to the fact that many operators are interested in flagging vessels in the WIO, owing to its proximity to rich tuna fishing grounds, and that States have adopted a stance of flagging foreign vessels. This phenomenon is not limited to the fishing industry. In actual fact, it has often taken its course in other fleets (*e.g.* merchant navy), and has then spilled over into fisheries. In fisheries, flagging foreign vessels can serve a social and economic goal, within the boundaries of a national fisheries development strategy, or it can simply relate to opportunistic flagging driven by outside forces and considerations. In the latter case flag States invariably end up with a deal which consists in very limited income relating to vessel registration, and vast responsibilities relating to the control of those vessels in either national or high seas areas. In most of the cases, these two considerations are not well-balanced, and make little economic and/or strategic sense. It is often rooted in the fact, that the transport administration confers flags to fishing vessels in the absence of a prior assessment and pre-authorization by the fisheries administration.

5. Recommendations for IORA Members

This report contains a general, birds-eye view assessment of the status of IUU fishing and MCS measures throughout the IORA region, covering 22 countries[36] in a summary manner.

It will pertain to IORA as an inter-governmental organisation to assess in which manner it can support individual members or groupings of IORA MS in pursuing avenues to improve performance in the domains highlighted below, notably by mainstreaming these themes into the agendas of upcoming meetings on fisheries and gauging the willingness and buy-in of individual members and/or groupings of members in proactively addressing these issues.

The general finding emerging from the afore-going chapters is that, while a lot of mechanisms have been put in place, a lot of progress remains to be made. The report also found that in specific areas progress is ongoing, while in other areas (*e.g.* the ratification, adoption and implementation of international instruments) progress has been very slow or zero over the most recent three-year period.

The following paragraphs lay out a number of key issues that arise from this general assessment, some of which apply to groups of countries, others applying to individual IORA members. Some, but not all, pertain to IORA as whole, as it is made up of geographically, socially and politically very diverse sub-regions. The following are emerging thematic areas in which individual countries, or regional groupings would do well in assessing in more detail, and in addressing, so as to improve their performance in the domain of MCS and the combatting of IUU fishing.

Funding MCS

It appears from the survey circulated, and the results obtained, that critical weaknesses affecting national MCS frameworks relate to a lack of funding and human resources, driving important institutional weaknesses that hamper performance, or may indeed deny any degree of solid performance in the domain of MCS altogether.

Within national budgets allocated to the fisheries administration, it is of essence for IORA Members to formally assess the share that is allocated to MCS (operational budgets, staff, training, IT and coms, equipment, surveillance platforms, maintenance, *etc.*), and to ensure that the relative level of funding allocated to MCS – as opposed to fisheries research/science and fisheries management frameworks – be adequate, fair and balanced.

Deterrence and penalties

It appears that legal frameworks, and the sanctions they provide are outdated and too limited in most instances. While this has not been reported on formally in this report, it can also be seen within national legislations, that sanctions for national offenders are often infinitely more severe than

[36] France became the 23rd IORA member in December 2020 but is not covered by this report which was initiated in August 2020.

sanctions for foreign offenders – which is unjust and counter-productive, especially when contemplating the management and the policing of international fisheries.

Sanctions for international (and national) fishery offences which are too small and too lenient fail to create the deterrent effect they are supposed to create. There needs to be a good balance between the risk of getting caught (which is a function of operational MCS presence in ports, at sea and in the air), and the heavy penalties that will ensue. If the one or the other are weak – or non-existent (see below) – then deterrence is limited and may tend towards zero. The weaker the penalties, the weaker the deterrence – and consequently – the higher the incidence of IUU fishing.

IORA members are encouraged to assess their penalty schemes, and to ensure that penalties that are commensurate with the benefits derived from IUU fishing are in place. For the worst infractions, criminal liability should be a given (leading to imprisonment), confiscations should be the norm, and pecuniary penalties should be exceptionally high – with fines equating to multiples of the estimated value derived from the infraction.

Deterrence and MCS operations

This report showed (table 3) that the number of detected and sanctioned IUU cases in 2019, across all responding countries, was extremely low. Only Sri Lanka reported a good degree of detected cases and sanctions across all of its fleet segments. To the common MCS practitioner, zero detected illegal fishing cases and/or sanctions over an entire year for a large fleet is equivalent to zero surveillance and inspection effort.

In the data collected, and except for Sri Lanka, it emerges that infractions detected in high seas operations was nil. Also, except for Sri Lanka and Bangladesh, it emerges that only 8 infractions were detected in domestic commercial operations across 7 countries. And only in 2 out of 9 countries, more than zero infractions were detected in small-scale fisheries. The latter implies that within a combined small-scale fleet of 567,500 vessels, not a single infraction was detected over a 365- day time span. The maxim "*Rules that are not enforced are useless*" is more than pertinent in this context.

This result confirms that means (financial, human, *etc.*) to conduct MCS operations may indeed by very limited in many IORA MS, and that for those countries where a functional minimum is given, these means are not being put to effective use. In addition to this, it arises that enforcement may focus on one segment more than on another – small-scale fisheries being the segment where in general, least detections occur (in relative terms).

IORA members are advised to put in place proper MCS mission and inspection reporting frameworks, to develop, to adopt and to implement recurrent inspection and control plans, and to critically review their MCS operations and results on a periodic basis. It is often the absence of formal national and sub-national inspection planning frameworks that leads to situations where hardly any operations are being conducted at all. Given the draconian penalties that apply to small-scale operators in several countries, fisheries inspectors may actually be discouraged to enforce the law.

Vessel registration

The assessment has found that the conditional pre-approval of the fisheries administration for a fishing vessel to be either built or imported – for subsequent registration on the national register of vessels (conferring of the flag), remains absent in most countries. It remains one of the preferred mechanisms of international operators, seeking out FOC States, to bring in and impose the presence of their fishing vessel(s) under a national flag, in a manner that the fisheries administration can hardly react to. The transport administration receives and processes the paperwork, and the fisheries administration awakens to the fact that a new industrial fishing vessel is flying the national flag – requiring oversight and monitoring by the same administration. This principle of conditionality has been enshrined in the IPOA-IUU since 2001.[37]

The implementation of this principle requires a pro-active engagement and collaboration between transport and fisheries administrations. IORA Members are encouraged to initiate this process, and to develop and legislate the mechanism that ensures that any vessel that has failed to receive a prior authorization (to build or to import a fishing vessel with a view to have it registered in the same country) by the administration responsible for fisheries management and oversight, shall not be authorized to fish in national or international waters, and shall be IUU listed on the same day it leaves port.

In doing so, IORA members should always bear in mind the balance between the very limited State revenue benefits related to vessel registration, and the monitoring and control resources that will need to be directed at these vessels, in order for the State to comply with its international vessel oversight obligations. Especially vessels that seek a flag, and plan to never fish in a country's waters, nor to use its ports, should not be flagged at all, as no genuine link (of any form) will exist between the vessel and its flag, and as the flag State will be virtually incapable of subjecting such vessel to any meaningful form of compliance monitoring whatsoever.[38]

Vessel monitoring and international transparency

A final important element emerging from the assessment is the monitoring technology fitted to fishing vessels. Since the turn of the millennium, AIS technology has become more and more prominent in fisheries, and many fisheries administrations now require commercial vessels of any size to carry transponders. Table 4 shows that while this is the case in some countries, it is not so in others. In fact, AIS seems more adopted in the EIO, while the WIO and NIO are lagging.

[37] In 2001, the International Plan of Action to Combat, Deter and Eliminate IUU Fishing posited in article 35: "*A flag State should ensure, before it registers a fishing vessel, that it can exercise its responsibility to ensure that the vessel does not engage in IUU fishing*." Of the ten IORA MS for which data were available, only Mauritius currently provides solid provisions to this effect in its 2007 Fisheries Act.

[38] It is useful to note in this context also that such vessels would normally apply for a fishing authorization to fish in the ABNJ, and that such licenses are generally extremely cheap also – often in the range of several hundred to a few thousand USD, maximum.

AIS presents the advantage that when a fishing vessel decides to operate in a zone where it has no authorization (AoC of a given RFMO, EEZ of a third State, *etc.*), third parties can detect and identify such vessel. This implies that the onus for oversight is shared more equally between the flag State and other third parties that may have an interest in monitoring given zones beyond the immediate national remit of the flag State. It also clearly signals to operators that their flag State no longer silently condones illegal incursions via the lack of operational data transparency – creating a strong deterrent.

IORA and its members should assess and consider the benefits of fitting their commercial fleets (or the domestic and international type) with AIS transponders, and weight these against all potential (and justifiable) shortfalls – of which they will likely find few, if any.

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Annex I – Country 3-Alpha codes

Australia	AUS
Bangladesh	BGD
Comoros	COM
India	IND
Indonesia	IDN
Iran (Islamic Republic of)	IRN
Kenya	KEN
Madagascar	MDG
Malaysia	MYS
Maldives	MDV
Mauritius	MUS
Mozambique	MOZ
Oman	OMN
Seychelles	SYC
Singapore	SGP
Somalia	SOM
South Africa	ZAF
Sri Lanka	LKA
Thailand	THA
United Arab Emirates	ARE
United Republic of Tanzania	TZA
Yemen	YEM

Annex II – Questionnaire

Questionnaire[39]

Question 1 – National Plan of Action to combat IUU fishing (NPOA-IUU):

Has your country developed and adopted an NPOA-IUU? (*note: a "yes" answer does not imply that you are actively implementing the plan – it merely implies that a document has been developed and circulated*)

Answer 1

yes	no

Question 2 – Size of the national fishing fleet:

What is the number (estimated if necessary) of national fishing vessels operating within and beyond your EEZ in the following categories? (*note: your national system of classifying fishing vessels can be used freely to fit all vessels into the three categories provided below – at your discretion*)

Answer 2

artisanal and small-scale coastal (single day trips)	**commercial medium and large-scale EEZ** (multi-day trips)	**commercial large-scale ABNJ**

Question 3 – National vessel monitoring system (VMS):

Is your commercial large-scale fleet operating in your EEZ monitored through a national Fisheries Monitoring Centre (FMC) and VMS system?

Answer 3

yes	no	not applicable

[39] [footnote in the original questionnaire] We would like you to kindly respond to the 15 questions here, using your best knowledge. Questions are limited to your country (your EEZ, your fleets, your ports, *etc.*) and it should not take you more than 15 minutes to answer all of them. Please simply reply by placing an "x" or a number (as applicable) directly in the individual answer tables below. The final question is open form, where you are invited to answer in full to an open question. The identity of respondents is not published.

Question 4 – Electronic logbooks:

Are any of your domestic fishing vessels operating exclusively within the EEZ subjected to an electronic logbook monitoring regime?

Answer 4

yes	no

Question 5 – Foreign fishing vessels:

Do you – in your capacity as a coastal State – authorise foreign-flagged fishing vessels to operate in your EEZ; and if so, is that fleet monitored through a national FMC and VMS?

Answer 5

foreign fishing vessels in EEZ?		foreign vessels subjected to VMS monitoring		
yes	no	yes	no	not applicable

Question 6 – VMS legislation:

Is there a dedicated VMS regulation in place (as subsidiary law), or is VMS regulated through provisions in the basic law, or is VMS not yet regulated?

Answer 6

regulated through basic law	dedicated VMS regulation	not yet regulated

Question 7 – Maximum penalty for unlicensed foreign fishing in EEZ (poaching):

What is the ***maximum*** penalty foreseen in the fisheries law for a large-scale commercial foreign fishing vessel caught fishing in your EEZ without a valid license? (*note: the maximum penalty generally encompasses a range of options, including fines, jail terms and forfeitures of vessel, catch and/or implements. you may hence respond in writing by listing these, or copy paste the relevant provisions in the law*)

Answer 7

Question 8 – Number of sanctioned infringements in 2019:

How many infringements were detected ***and*** sanctioned both within your EEZ, and for your vessels operating in ABNJ waters in 2019? (*note: the same fleet segments used in question 2 apply. If a fleet segment under question 2 does not exist, insert "n/a". If no sanctions have been issued, please indicate "0". Blanks will be evaluated as zero also.*)

Answer 8

artisanal and small-scale coastal (single day trips)	**commercial medium and large-scale EEZ** (multi-day trips)	**commercial large-scale ABNJ**

Question 9 – Vessel registration and licensing:

Have vessel registration (conferring of a flag) and licensing the vessel to fish (conferring of a fishing license) been linked in a conditional manner under national law, so that if the fisheries authority does not grant a fishing license to a prospective fishing vessel brought into the country, the vessel cannot be registered/flagged? (*optional: please indicate the reference of the legal diploma providing this rule in the box provided at the bottom of the table*)

Answer 9

yes	**no**
legal ref.:	

Question 10 – Authorization to operate in the ABNJ:

Has the authorization that the flag State should issue to its fishing vessels seeking to operate in waters beyond national jurisdiction, been legislated?

Answer 10

yes	**no**

Question 11 – ABNJ operations - VMS and AIS provisions:

If you are authorizing vessels to operate in the ABNJ, are those vessels bound by law to carry functional national VMS and AIS? (*note: if no vessels flying your flag operate in the ABNJ, and there is no legal text in place, please put an "X" under "n/a" in the first column*)

Answer 11

n/a	VMS		AIS	
	yes	no	yes	no

Question 12 – Vessel marking scheme:

Has the standard (markings, font and size) according to which fishing vessels must be marked for identification been legislated through a national diploma for fishing vessels operating in the ABNJ?

Answer 12

yes	no	not applicable

Question 13 – Designated fishing ports:

Have fishing ports been officially designated and legislated, limiting foreign vessels to call to such designated fishing ports to conduct fishing-related activities? (*note: this question is answered in two steps; "designated" refers to fishing ports having been designated with an RFMO, the FAO, etc., while "legislated" refers to the act of the port state making these designations legally binding through a text of law*)

Answer 13

designated		legislated	
yes	no	yes	no

Question 14 – Advance request for entry into port (AREP):

Has your country developed and legislated an AREP procedure for foreign fishing vessels calling into national ports; and if so, is this procedure already being actively implemented?

Answer 14

AREP legislated?		**AREP actively implemented?**		
yes	**no**	**yes**	**no**	**not applicable**

Question 15 – Key constraints in developing effective national MCS system:

Please name the three most important constraints that hinder your country's efforts in developing a broader and more effective MCS system to combat all major forms of IUU fishing – starting with the most important. (*Note: constraints can be located at multiple levels, including political, financial, human resource-related, governance-related, technical, etc. – please use as much space per response as you feel is needed to express yourself clearly. If there are no such constraints, please just insert "none" in the first line*)

Answer 15

#	**Key constraint**
1.	
2.	
3.	