WORKSHOP WITH THE FCWC ON RISK MANAGEMENT ABIDJAN, CÔTE D'IVOIRE, 17-19 FEBRUARY 2020

REPORT

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1. BACKGROUND AND OBJECTIVES

1.1. BACKGROUND

A sub-regional risk management workshop was held by the Fisheries Committee for the West Central Gulf of Guinea (FCWC) with the technical support of the European Fisheries Control Agency (EFCA) as part of the EU-funded PESCAO programme, in collaboration with Trygg Mat Tracking (TMT) as part of the Norad funded project "Fisheries Intelligence and MCS support in West Africa". The event was held in the Interregional Maritime Security Institute (Institut de Sécurité Maritime Interrégional -ISMI), in Abidjan, Côte d'Ivoire, over three days from the 17th to the 19th February 2020. ISMI is part of the regional academy of science and technology of the sea (ARTSM in French).

A total of 19 participants took part in the workshop from the 6 countries of the FCWC sub-region; Benin, Ghana, Côte d'Ivoire, Liberia, Nigeria and Togo. Representatives from the FCWC, TMT, Stop Illegal Fishing (SIF), EFCA attended as instructors. The agenda and the list of participants and support staff is attached as Annexes 1 and 2 respectively.

1.2. OBJECTIVES OF THE WORKSHOP

The overall objective of the workshop was to strengthen the capacity of the FCWC member states' staff, responsible for implementation of national fisheries Monitoring, Control and Surveillance (MCS) strategy, to perform risk assessment of fisheries compliance, in the support of a risk-based approach to management. The workshop therefore focused on deepening the participants' understanding of the use of risk assessment as a decision-making tool, to enable a more efficient, targeted and effective application of control resources, ultimately with the objective to improve compliance, reduce IUU fishing, and to ensure the sustainable exploitation of fisheries resources.

The specific objectives of the workshop were to:

- present the risk management process as the basis for strategic planning of MCS activities and also increase awareness and understanding amongst individuals responsible for implementing national MCS strategies;
- identify and characterize the risks of IUU fishing at the sub-regional level;
- determine the likelihood and potential impact of a non-compliance case;
- determine measures concerning the treatment of IUU fishing risks.

2. OPENING OF THE WORKSHOP

Following the viewing of a short film about ARTSM, the representative of the Director-General of ARTSM, Koffi Eugene opened the event by welcoming the participants. The Secretary-General of the FCWC, Seraphin Dedi, then also welcomed participants. The director of ISMI, Abe Lazare, likewise welcomed participants.

A tour de table allowed all present to introduce themselves, and then the agenda was adopted. The agenda for the workshop is attached in Annex 1.

3. INTRODUCTION

3.1. THE PESCAO PROJECT

The EFCA presented an overview of the EU funded PESCAO ("Improved Regional Fisheries Governance in Western Africa") project, and highlighted EFCA's activities within the project. Particular emphasis was given to the activities undertaken in support of the FCWC member countries in the form of legal support, capacity building, improving national and regional cooperation, and technical support.

The actions that the EFCA will continue to work on throughout 2020 were mentioned, including:

i) Support to the training of trainers, fisheries inspectors and judicial personnel
ii) Support for the acquisition and installation of equipment for the new regional fisheries control centre
iii) Legal support, including in the development of the National Plan of Action against IUU fishing (NPOA-IUU) (to include two/three countries per year, upon request)
iv) Development of a memorandum of understanding (MoU) with the FCWC, SRFC and Regional Maritime University (RMU) for trainings
v) Support to the establishment of a regional observer programme

3.2. FISHERIES INTELLIGENCE AND MCS SUPPORT IN WEST AFRICA PROJECT – THE WEST AFRICA TASK FORCE (WATF)

The TMT Regional Coordinator, Viviane Koutob, gave a presentation on the background and work undertaken under the project 'Fisheries intelligence and MCS support in West Africa', funded by Norad, supporting the West Africa Task Force (WATF). The WATF serves as the FCWC regional MCS working group, strengthening regional and national inter-agency cooperation. By supporting a communications platform for sharing and exchange of information, and enhancing Member States national capacities to fight IUU fishing, the WATF has proven to be an effective mechanism that is strengthening regional MCS, improving compliance of fisheries operations, and serves as a reference in the region.

Currently the project is in its second phase, which will run from 2018-2022. Continuing its regional cooperation and capacity focus, the second phase also puts an emphasis on sharing of experiences and on the promotion of the Task Force model for potential replication in other parts of the world.

3.3. ACCESS TO FISHERIES AND NON-COMPLIANCE ISSUES - TRENDS SINCE THE ESTABLISHMENT OF THE WATF

Continuing her presentation Ms Koutob outlined the access to fisheries resources regimes in the FCWC member countries which are basically based on two types of access. The first type is through authorisation/license for national/flagged vessels and for foreign vessels through fisheries access agreements between the coastal country and the flag country. Through questionnaires and interviews, a baseline of all relevant information related to the fisheries sector in the FCWC member countries was established including offenses before the launch of the WATF initiative, thus, it was possible to track and follow the changes in the sector over the years. It was clearly noticed a change of patterns in the trends of offenses throughout the project lifetime. Eventually through the WATF, the region has been experiencing more compliance from the operators and as information is being shared, there's been a significant decrease of infractions, more engagement and commitment of fisheries officials to pursue relevant cases, more and more cooperation between enforcement agencies while capacities are being strengthened.

4. UNDERSTANDING THE RISK IN FISHERIES – THE THEORY & THE METHODOLOGY TO CONDUCT RISK ASSESSMENT

4.1. WHAT IS RISK ASSESSMENT AND WHY DO WE DO IT IN FISHERIES? BASIC PRINCIPLES, DEFINITIONS, STEPS IN THE PROCESS, AND THE EFCA METHODOLOGY FOR REGIONAL RISK MANAGEMENT.

The EFCA gave a presentation of the generic principles and guidelines of risk assessment and its value in fisheries control; to enable a more efficient, targeted and effective application of control resources. The EFCA described its methodology applied to conduct regional risk assessments for non-compliance with fisheries regulations in the EU (published and available online[a]). In EFCA's methodology, the risk assessment exercise aims to establish priority threats for subgroups of the EUs fishing fleets in a region, called 'fleet segments', defined according to the fishing gear, area and target species. Then, based on the assessment, a set of recommendations are prepared which serve as the basis for the planning of control activities for an efficient and cost-effective implementation aiming to improve compliance.

The EFCA explained that such a risk management approach can be adapted for the needs and to accommodate the available information of the sub-region of the FCWC, highlighting that the approach is aligned with the generic risk management methodologies applied for other situations such as natural hazards events and follows the recommended guidelines ISO 31000.
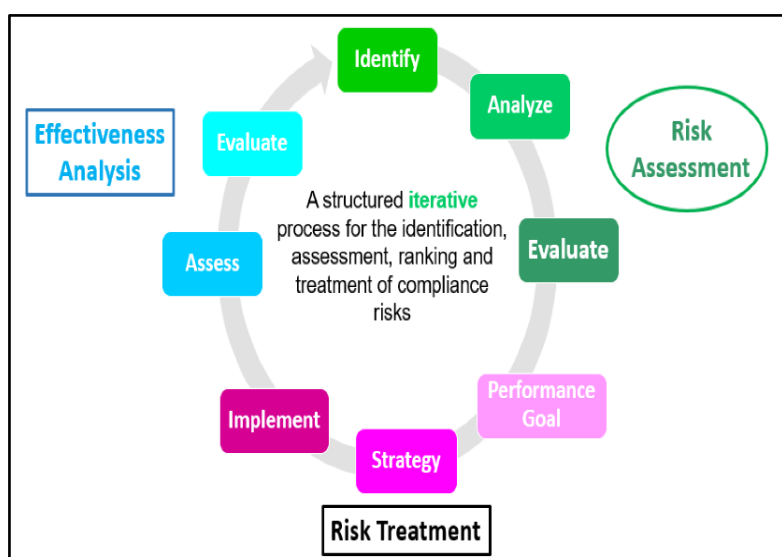

Figure 1 – Example of a compliance risk management process

The EFCA further elaborated on the **risk management system**, underlining that it consists of a step by step process to identify threats, analyse the potential impact and likelihood of each, calculate the resultant risk level, and then to define and apply treatment measures for the highest risks, and finally evaluate the process. The cycle needs to be repeated, and the information used updated, to best reflect the reality of a dynamic situation in which fishermen's behaviour is influenced by their responses to a multitude of variables in their environment. As such the steps need to be adapted and improved as necessary and repeated regularly as part of standard procedures of the control authorities.

Following the process ensures the efficient placement of compliance and enforcement resources, to respond to the highest risks in a prioritised manner, to achieve the ultimate goal; to maximize the level of compliance with fisheries regulations and to keep non-compliance at a minimum acceptable level. Figure 1 depicts the main steps of the risk management process.

Definitions: It was further explained that in a fisheries compliance risk assessment the main 'threats' are the types of non-compliance, based on the regulations in force. For each threat, the 'likelihood'

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[a] https://www.efca.europa.eu/sites/default/files/Risk%20Assessment%20Methodology.pdf

is the probability of the non-compliance situation occurring while the 'impact' quantifies the magnitude of the consequences of the event (if it occurs) to a given objective. The objective is based upon the fisheries policy objectives which are typically to ensure the sustainability of the exploitation of fisheries resources. The impact therefore provides a quantification of the severity of the consequences of a non-compliant event in relation to the objectives of the fisheries policy.

To identify impact: As regards the calculation of the impact, it was underlined that in EFCA's risk assessment methodology the impact is considered as *'independent' from the threat*, and as such generic to the fishery unit considered. Two factors are used: *i)* stock status; and *ii)* level of catches.

i) For the stock status, the best available scientific data is used, and a score of 1 (healthy/not overexploited) to 4 (unhealthy/overexploited) is assigned.

ii) For the level of catches, this is the proportion of the total allowable catch (TAC) exploited by the particular fleet unit. A score of 0 (low catches) to 4 (high catches) is assigned.

As shown by Figure 2 in the EFCA methodology, a final impact score is then identified as the product of both, with more weight (importance) given to stock status than to catch level, in a simple calculation. The calculation results in an impact rating, rounded up or down, from 1 (low impact) to 4 (high impact).

In this way, if a fishery is of poor health, and/or catches are of a significant magnitude, a non-compliance event is deemed as having a high impact. On the contrary, if a fishery is of good health, and/or catches are low, a non-compliance event is deemed as having a low impact.
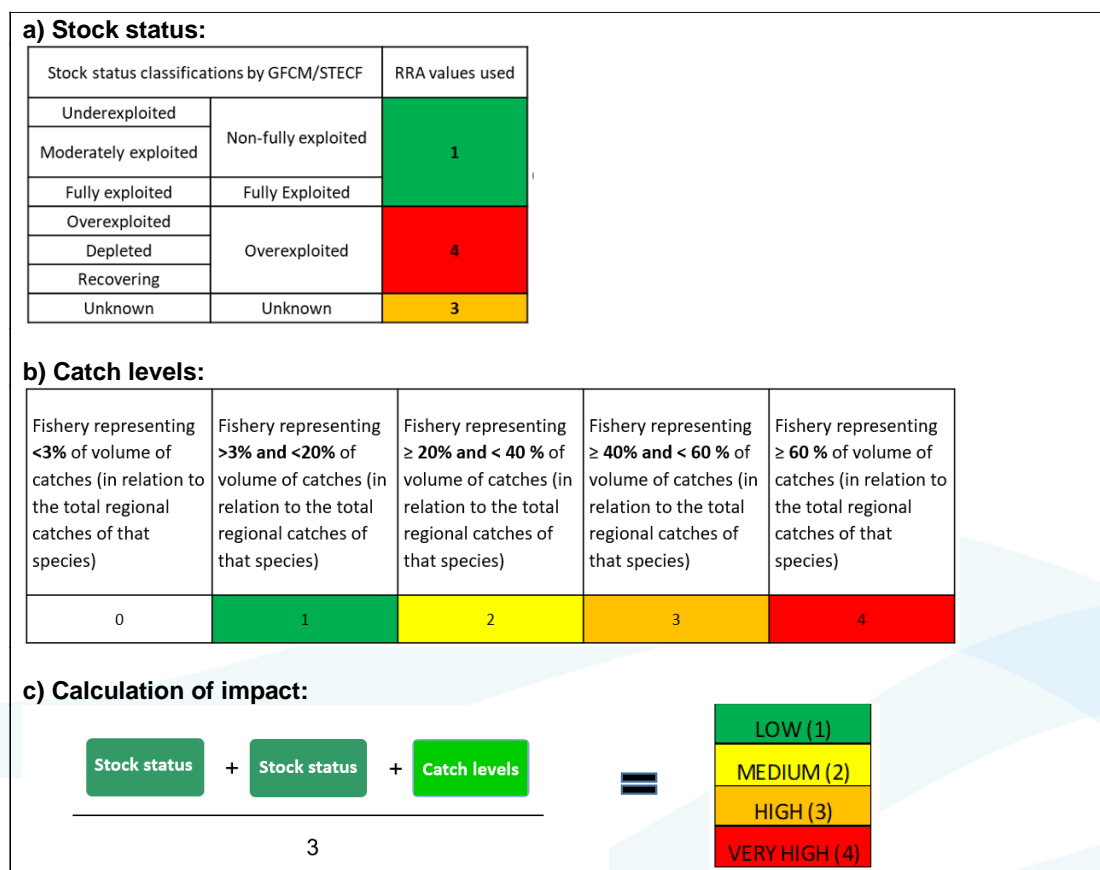

Figure 2 – EFCA methodology for calculating the impact of a threat of non-compliance with fisheries regulations as a product of stock status and catch levels (independent of the threat).

The EFCA highlighted that of course this part of the EFCA methodology requires reliable data on stock status and catch levels, and is relevant when the fleet catching a single species is divided into several units/segments and a total allowable catch is assigned at a species level. For situations, such as for the region of the FCWC, where it may be impractical to divide fleets catching a single species into sub-units, where total allowable catches per species may not be assigned, and in the absence of data on stock status and catch levels, a simplistic and pragmatic approach can be applied as an alternative.

Unless it is considered that the information/knowledge available indicates otherwise, a pragmatic and simplified solution is to apply the 'precautionary principle' and assign an impact rating of high (3) to all fisheries units.

To identify likelihood: In the EFCA's methodology this is identified *for each threat*. Where relevant data (such as the detected infringement rate) or compliance indicators are not available the calculation of the likelihood can be based on 'expert knowledge', i.e., the knowledge of the officials working in fisheries control, based on their experience. Factors that could potentially influence the likelihood of non-compliant behaviour, incentivising or dissuading fishermen to behave in a non-compliant way, should be considered. For example, the abundance of juvenile concentrations (providing opportunity to fish legally undersized fish) and the presence or absence of patrol vessels (the level of control effort), etc. In the EFCA methodology, a score of 1 (low likelihood) to 4 (high likelihood) is assigned.

Calculation of risk: The EFCA pointed out that after having estimates of *i)* impact and *ii)* likelihood it is then possible to calculate the 'risk' scores for each threat. In the EFCA methodology a simple calculation is used: impact x likelihood = risk score.

Once risk scores are calculated, the corresponding risk level (low to high) is determined using a scale such as:

Figure 3 – Matrix with the risk values based on the product of impact and likelihood

Risk treatment measures: The EFCA explained that according to its risk management approach, once the fishery units with the highest risks (for the high and very high risks), are identified risk treatment measures should be proposed for the planning of the future MCS activities. Types of recommendations can include:

-   Recommendations for control and monitoring;
-   Recommendations to improve the culture of compliance;
-   Recommendations for regional compliance monitoring indicators.

Summary: The EFCA ended the presentation by stressing that all risk assessment processes share common principles. The specifics of the EFCA methodology work well in the EU on a regional basis, where the Member States share access to common fisheries, however other methodologies are applied in other parts of the world. The EFCA methodology can be used as a guide and a starting point, to be adapted accordingly depending on the needs of the FCWC region.

The EFCA briefly iterated that the main steps of a risk assessment are *i)* identification of the main threats, *ii)* calculation of the impact and likelihood and *iii)* identification of risk treatment measures for the highest threats.

The EFCA explained that during the EFCA led upcoming practical working sessions of the workshop, these steps would be carried-out in groups by the participants for the fisheries of the sub-region of the FCWC.

4.2. DIFFERENT SITUATIONS WHERE A RISK ASSESSMENT IS NEEDED: 1) AS PART OF DUE DILIGENCE PROCESSES (FLAGGING, LICENSING, REEFER OPERATIONS, ETC.); 2) AS PART OF THE IMPLEMENTATION OF THE PORT STATE MEASURES AGREEMENT (PSMA)

Mr. Yann Yvergniaux, TMT Analyst, presented on the role of fisheries intelligence in risk-based MCS. In the broad sense, intelligence gathering and dissemination is the process of developing forecasts of behaviour and recommended courses of action based on multiple information sources. As such, fisheries intelligence is the underlying input for risk assessments at several levels – from vessel level to fleet or fishery level. The purpose of developing an effective fisheries intelligence gathering and analysis system is to help manage and limit the risk of IUU fishing by identifying where limited MCS resources can be most effectively used.

Depending on the assignment, the gathering of intelligence can be ongoing or targeted. Ongoing intelligence gathering is usually focused on pre-identified fisheries units and contributes to improving the understanding of non-compliance risk in a given fishery. This type of intelligence process provides fishery managers with tools for ongoing MCS planning. Targeted intelligence gathering is usually tied to assigned risk assessment tasks in support of specific decision-making processes, such as flagging, licensing or port entry.

Due diligence conducted on a vessel applying for a flag or a license is an intelligence-driven process whereby vessel identity information and operational history are verified in order to establish the legality and risk status of a vessel and its owner/operator. This type of process is strengthened by regional cooperation mechanisms such as the WATF, as it pools vessel operational/compliance history information, provides document verification opportunities, and gives final recommendations a wider reach. Due diligence processes have been promoted in the FCWC region given the high efficiency of actions such as license refusal in a context of under resourced MCS.

Per Erik Bergh from Stop Illegal Fishing gave a presentation on due diligence process and risk assessment in relation to implementation of the FAO Port State Measures Agreement (PSMA).

Port States can deny port access to any vessels they suspect or know have been involved in IUU fishing (or other violations). Or they can allow the vessel to enter port to enable an inspection of the vessel and take further action, including preventing offloading of catch and denying other port services.

To do so, certain systems needs to be in place. Requiring early request for port access gives authorities time to gather information on vessels and make informed decisions to grant or deny port access.

The starting point for any port visit by a foreign fishing vessel is the Advanced Request for Entry into Port (AREP). The AREP gives fisheries officers the opportunity to identify illegal operators, deny them access to port, or authorise port access to undertake an inspection. Granting access to a foreign fishing vessel or support vessel should only happen when due diligence has taken place to check legality of the vessel, the fishing activity and its owner or operator. Most countries will have between 24 and 72 hours to perform a due diligence check depending on national legislation.
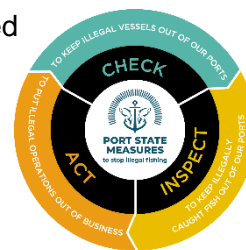
An example was given where 10 areas were assessed based upon information provided in the AREP as well as use of other available information sources such as internet.

No	Issues to consider	Score 1	Score 2	Score 5
1	Is the vessel listed as an IUU vessel with any RFMO?	No IUU listing reported	Alleged IUU activities reported to RFMO, but not yet IUU-listed.	Vessel listed as IUU vessel with RFMO. +20
2	Does the vessel have any known IUU fishing history in the last 3 years?	No IUU fishing incidents detected last 3 years.	One IUU incident found, but case is settled with relevant State.	One unsettled case detected within the last 3 years. +20
3	Is an INTERPOL Purple Notice issued for the vessel?	No purple Notice Issued	Interpol Purple Notice previously issued but cancelled/withdrawn.	Interpol Purple Notice issued and current. +20
4	Is the vessel authorised?	Authorised by flag State and RFMO, licensed by coastal States.	Unconfirmed or inconsistent authorisations.	Not authorised.
5	Does the owner, operator, master or agent have any known IUU fishing history?	Not linked to IUU fishing cases.	Settled IUU fishing incidents with other fishing vessels.	One unsettled IUU fishing case or several settled cases within the last 3 years.
6	Did the vessel change name or flag during the last 3 years?	No flag or name change found	One name or flag change but not directly linked to IUU fishing.	Several unexplained name or flag changes.
7	Is the flag State associated with IUU fishing issues?	Flag State not associated with IUU fishing.	Flag State has had 1-3 incidents of vessels being involved in IUU fishing in the region last 3 years.	Several IUU incidents associated with the flag State.
8	Do port calls indicate use of 'ports of convenience'?	Use of regular ports with good PSM system in place.	Use of ports with limited PSM system in place.	Use of ports with little or no PSM system in place.
9	Are the species, fishery or product onboard associated with known IUU fishing issues?	Catch does not include high-risk species.	Catch linked to high-risk species.	Catch includes species or product tend to have IUU fishing issues e.g. sharks, bycatch of protected or endangered species.
10	Do AIS tracks indicate suspicious behaviour?	AIS positions and track good and mainly transmitting when at sea.	AIS positions indicate that AIS is frequently turned off.	No AIS track or positions can be found within 90 days.

If the vessel qualifies for a purple colour, the potential risk will indicate that port access should be denied (this is reflected in the +20 remark).

A suggested scale for decision making may be:

- 10-15: Vessel regarded as a low risk vessel and port access can be granted. Inspection is not a high priority but should be done if staff are available

- 16-22: Vessel regarded as medium risk and port access can be granted with thorough inspection.

- 23-95: Vessel regarded as high risk. Port entry and services must be denied, unless the State, RFMO or Interpol Notice requires intelligence in which case port access can be allowed for inspection purposes to obtain information.

It is important that the result of the assessment is reported to the person making the decision if the fishing or support vessel can enter port. An example of a simple reporting form is given below:

Name of officer doing the assessment:		Date and time:
No	Issues considered	Comment
1	All documentation required received and verified	
2	Is the vessel listed as an IUU vessel with any RFMO?	
3	Does the vessel have any known IUU fishing history in the last 3 years?	
4	Are there any Purple Notices Issued for the vessel through Interpol?	
5	Does the owner, operator or agent have any known IUU fishing history?	
6	Did the vessel change name, or Flag during the last 3 years?	
7	Are the Flag State Vessels known to be associated with IUU fishing issues?	
8	Are port calls indicating use of "ports of convenience"?	
9	Does the Master of the fishing vessel have any known IUU history?	
10	Are the species, fishery or product onboard associated with known IUU fishing issues (e.g. sharks and shark fins)?	
11	AIS track and suspicious behaviour?	
Recommendation:		
Decision:		Date and time:

The AREP, risk assessment and reporting/decision form must be archived and accessible for later use.

5. UNDERSTANDING THE RISK IN FISHERIES – IN THE REGION

5.1. ANALYSIS OF REEFER OPERATIONS AND ASSOCIATED IUU RELATED THREATS FOR THE FCWC REGION

Mr Yann Yvergniaux presented the outcomes of a regional analysis of reefer traffic and associated risks. Reefer operations in the FCWC region are generally poorly understood, partly because these vessels have for a long time been operating outside of the remit of fisheries authorities. FCWC has however identified at-sea transhipment by reefer vessels as a major challenge in the sustainable management of fisheries resources, a key facilitator of illegal fishing and a means for illegally caught fish to enter the supply chain.

The analysis was requested by FCWC Member States as part of the implementation of the FCWC Regional Strategy to Combat Illegal Transhipment at sea, and aims at providing an overview of the operations and risk factors associated with individual reefers and operating patterns. The study is meant to be used as a baseline risk assessment and will be accompanied by recommendations to countries for measures to be put in place for better targeted and more efficient port controls of reefers.

The analysis was done by TMT using Global Fishing Watch AIS-based data, and 2018 as a reference year. During that year, 127 reefer vessels were identified as having called to port at least once in the FCWC region. Among those vessels, 108 were identified as reefer cargo vessels – i.e. vessels transporting bulk/packaged cargo directly in their refrigerated holds – most of which are potentially capable of transhipping with fishing vessels and believed to be specialized in the transport of fisheries products. The 19 other vessels are reefer containerships – i.e. vessels transporting refrigerated intermodal containers between reefer terminals – not likely to be specialized in fish products and not capable of conducting transhipment operations with fishing vessels.

Preparation of anchorage visits and voyages history for each vessel identified a total of 1007 port calls in the FCWC area in 2018. Initial port use and voyage statistics were presented, providing an overview of reefer traffic in the region, and highlighting that visits by cargo reefers are spread across all FCWC countries, with varying traffic intensity. In contrast, Côte d'Ivoire and Ghana account for most port visits by reefer containerships.

Vessels were grouped in operational categories based on ports visited and trade routes. Operational patterns within each group were then described, pointing at likely sources of fish, potential dependency on transhipment operations, regularity of visits in same ports, etc. The analysis of operational patterns suggest that four main trends are: 1) the high level of specialization in African operations of most vessels ; 2) the importance of the trade in small pelagics; 3) the existence of a 'triangular trade' (i.e. importing one type of fish product to the African continent, trading another one intra-regionally, and taking a third one out of the region); and 4) the importance of shuttle-type operations (i.e. reefers servicing affiliated fishing fleets in several West African countries).

In the final stage of the analysis, those operational categories will be assessed in the light of several risk criteria. Criteria include compliance levels in the source fishery, compliance history at donor vessel/reefer/company level as well as specific reefer AIS events. AIS events receiving attention as part of the analysis were loitering events, AIS gaps and encounters at sea that could indicate transhipment-at-sea operations (banned throughout the FCWC region, authorized in other regions). This will inform the process of assigning a risk level to reefer categories/operating patterns so that port controls can focus on those considered high risk.

The first step in the risk assessment process is to define the scope of the risk assessment exercise. To frame the potential scope of a regional risk assessment for the FCWC region, the EFCA briefly presented a summary of the main fisheries, number of national vessels involved, and main landing ports in each of the FCWC member countries, according to information available on the FCWC website[b] and the FAO Fisheries and Aquaculture profiles[c].

In preparation of the workshop, a questionnaire had been sent to the participating member countries to collate information regarding the current situation in the sub-region, including the legal requirements, the priority fisheries, the perceived main threats of non-compliance and the current methods used for assessing risk of non-compliance. This information is of value to guide a regional risk assessment. All six FCWC countries completed the questionnaire. The priority fisheries for consideration in a risk assessment, as identified by the member countries of the FCWC in the questionnaire, was presented, as shown below in table 1.

Table 1 - The priority fisheries for consideration in a risk assessment as identified by the FCWC countries in the questionnaire responses in preparation for the workshop.

	Benin	C. Ivoire	Ghana	Liberia	Nigeria	Togo
Bottom trawl (any)	x	x	x	x	x	x
Bottom trawl – shrimp					x	
Bottom trawl – finfish	x				x	
Bottom trawl – cephalopods					x	
Pole & Line	x		x	x	x	
Seiners	x	x	x			x
Artisanal	x	x		x	x	
Inshore vessels			x			
Longliners		x				
Sardine fisheries		x				
Beach seine						x
Gill net						x
Shark fisheries						x
Refrigerated vessel	x					x
Reefer			x			

Also to guide the regional risk assessment, the most common violations to national fisheries legislation in FCWC member countries, according to the 2016 review of the FCWC countries' legal framework for fisheries[d] (shown below in table 2), were then considered by the group.

Table 2 - The most common violations to national fisheries legislation in FCWC member countries, as reported in 2016 in the published review of the FCWC countries' legal framework for fisheries.

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[b] https://fcwc-fish.org/about-us/member-states
[c] http://www.fao.org/fishery/countryprofiles/search/en
[d] FCWC/WATF (2016) A review of the FCWC countries' legal framework for fisheries. (EN) Tema, Ghana.

	Benin	C. Ivoire	Ghana	Liberia	Nigeria	Togo
1) Fishing without a license/authorization or with an expired license/authorization	x	x	x	x	x	x
2) Fishing with unauthorized or illegal gear (including small mesh size) or methods	x	x	x	x	x	x
3) Fishing in prohibited areas (including in areas reserved to artisanal fisheries)	x	x	x	x	x	x
4) Use of forged documentation in relation to fishing activities		x	x	x	x	-
5) Provision of false, inaccurate or incomplete information on catch and fishing activities (knowingly with the intent to deceive)		x	x	x	-	-
6) Illegal transhipment of catch (including of by-catch into canoes and sale of fish at sea)	x	x	x	x	x	-
7) Trading in illegal fish (knowingly purchasing, selling, importing or exporting fish caught illegally)	x	x	-	x	x	-
8) Targeting of unauthorized species (e.g. below minimum size/immature or valuable by-catch)	x	-	x	-	x	-
9) Damage to artisanal gear by industrial fishing vessels or merchant vessels	-	-	x	x	-	-

5.3.   IDENTIFICATION OF THE FISHERIES FOR A REGIONAL RISK ASSESSMENT

As shown by table 1, regarding the priority fisheries in the member countries for which a risk analysis could be carried out, industrial bottom trawling vessels was identified by all countries, and artisanal/inshore vessels were identified by all countries apart from Togo. Pole and line and tuna seiners were also identified by four countries as priorities. The EFCA stressed that these common priority fisheries would be the most appropriate ones to focus on for a regional risk assessment of the FCWC region.

6. PRACTICAL SESSIONS - CONDUCTING A REGIONAL RISK ASSESSMENT

The EFCA led the participants through a practical exercise broken down into four sessions. The objective was to guide the participants through the steps of a basic risk assessment, applying it to the fisheries of the region. Through the exercise for the priority fisheries the threats of non-compliance, along with their potential impact and likelihood, were defined, and possible 'risk treatment measures' identified by the participants. The exercise enabled brainstorming on a regional basis, and provided preliminary results based on the knowledge of the participants.

Other methodologies exist, however for this exercise, the simplified EFCA methodology was applied to perform the risk assessment on fisheries compliance. Ultimately, this methodology can be adapted and refined to better fit the needs of the region, and as seen as most appropriate by those applying it. The results can be refined through the input of more information/data beyond the workshop, and ultimately can be applied to enable a focused application of fisheries control resources in an efficient and prioritised manner by the control authorities.

For the exercise the participants divided into four groups according to language (two English and two French speaking groups). Each group chose bottom trawling as well as one or two other fisheries from the priority fisheries in common across the region, as identified in the questionnaire responses, to work on.

A template excel table (spreadsheet per group/fishery) as shown in figure 4 was provided to the participants on a memory stick and was populated by the participants as the sessions progressed, to capture their work. The result of the groupwork was a fully populated table per priority fishery per group of participants, as attached in annex 3.

The EFCA introduced each of the 4 sessions with a brief presentation to recap the theory of relevance, to outline the expectations of the session, and to guide participants.

The organisers (EFCA, TMT, FCWC-PESCAO coordinator and SIF) circulated between the groups to animate and encourage their work.

Figure 4 – empty excel template distributed to the prticipants, and progressively populated by groups during the 4 sessions of the EFCA led practical exercise.

Category of threat	Risk identification		Risk analysis		Risk evaluation	Risk treatment
	Threat	Characterization (details/drivers)	Impact (independent of the threat)	Likelihhod (expert knowledge)	Risk level/score	Risk treatment measures
1) Fishing without / with an expired license/authorisation			3			
			3			
2) Fishing with unauthorised or illegal gear (including small mesh size) or methods			3			
			3			
			3			
3) Fishing in prohibited areas (including in areas reserved for artisanal fisheries)			3			
			3			
			3			
4) Use of forged documentation in relation to fishing activities			3			
			3			
			3			
5) Provision of false, inaccurate or incomplete information on catch and fishing activities (knowingly with the intent to deceive)			3			
			3			
			3			
6) Illegal transhipment of catch (including of by-catch into canoes and sale of fish at sea)			3			
			3			
			3			
7) Trading in illegal fish (knowingly purchasing, selling, importing or exporting fish caught illegally)			3			
			3			
			3			
8) Targetting of unauthorised species (e.g. below minimum size/immature or valuable by-catch)			3			
			3			
			3			
9) Damage to artisinal gear by industrial fishing vessels or merchant vessels			3			
			3			
			3			

Table 3 - The fisheries considered by the 4 groups for the practical sessions of the workshop.

Fishery	Group 1 (Nigeria & Ghana)	Group 2 (Liberia & Nigeria)	Group 3 (Côte d'Ivoire, Togo & Benin)	Group 4 (Côte d'Ivoire, Togo & Benin)
Bottom trawlers	X	X	X	X
Purse seiners	X			
Longliners				X
Artisanal	X	X		
Artisanal gill netters			X	

6.1. PRACTICAL SESSION 1 - THREAT IDENTIFICATION AND CHARACTERISATION

The EFCA introduced the session explaining that the intention was for the groups to, for their chosen fisheries, identify the associated possible non-compliance events, the 'threats', noting details and drivers. For example, 'using illegal fishing gear, specifically undersized mesh for the trawl nets, with the intention to catch more fish including undersized fish for which there is a lucrative market'.   The EFCA stressed that the specific details characterising the threats, and an understanding of the motivation for fishers to commit them, will ultimately enable the identification of more targeted and effective risk treatment measures.

The most common violations to national fisheries legislation in FCWC member countries, according to the 2016 review of the FCWC countries' legal framework for fisheries (shown in table 2) were included in the excel spreadsheet template as the threats to consider as a starting point for the groups. However, the groups were encouraged to identify any further threats as appropriate. The groups used all information available; in the absence of data, the knowledge of the individuals participating, based on their experience, was sufficient. Also, two guidance documents 'threat examples' and 'threat characterisation examples' were provided to the groups for inspiration.

The participants in their groups then brainstormed together to identify all the threats, linked to the current rules and regulations applicable to their fisheries, and to specify details and what they considered to be the motivation or drivers to each type of non-compliance. Once their work was completed, the results were presented by each group and discussed in plenary. The results of the session can be found in Annexes 3 and 4 which provide the final risk matrix tables as completed by the groups over the course of the 4 practical sessions for the fisheries.

6.2. PRACTICAL SESSION 2 – DETERMINING THE IMPACT AND LIKELIHOOD OF A NON-COMPLIANT EVENT

The EFCA introduced the session explaining that the intention was for the groups to, for their chosen fisheries, determine the potential impact and the likelihood of each threat identified in session 1.

- ### POTENTIAL IMPACT

Table 4 - evaluation of the potential impact of a threat

Impact	low	Medium	high	very high
Colour code	green	yellow	orange	Red
Numerical code	1	2	3	4

In the EFCA methodology, for impact, a score of 1 to 4 is assigned; 1 (very low), 2 (medium), 3 (high) or 4 (very high). The potential impact is considered *independent* of the threats, as it depends on the stock status and the levels of catches. In the absence of such information for the FCWC regional fisheries, it was suggested for the practical exercise of the workshop to adopt a pragmatic and precautionary approach, and attribute a level of impact score of 3 (high) to all selected fisheries within a four stage evaluation of the overall impact.

However, it was suggested by the EFCA that if the participants considered that there was good reason, an alternative impact rating should be assigned. For example, if it was known by the participants that a particular fishery is of poor health, and/or for example catches are of a significant magnitude (an alternative approach could be, where a fishery is of high socio-economic value to the coastal communities/ nations or region) a higher rating could be allocated. On the contrary, if, for example, it is known by the participants that a particular fishery is of good health, and/or catches are low (the fishery is of low socio-economic value to the coastal communities/ nations or region), a lower rating can be allocated.

The groups were encouraged to go through the threats and identify where a deviation from the default impact rating of 3 may be appropriate. The alternative scores were input into the excel spreadsheet and the groups were encouraged to note the rationale behind the rating to enable review and refinement of this rationale in the future.

Note for possible work beyond the workshop

Impact: Alternative approaches to assigning impact could be explored for the sub-region, such as quantifying potential consequences of the threats upon the economic sustainability of the coastal communities, the performance and credibility of the FCWC member countries under international agreements in international fora, or the reliability and credibility of the national authorities management systems in place. Also, it may be considered, in divergence from the EFCA methodology, that the way to assign an impact rating should be considered as *dependent* upon the threat. For example, in a single fishery unit the two threats – 1) a vessel significantly under-declaring catches and 2) a vessel operating with an inaccurate document onboard are considered to have the same impact using the EFCA methodology. The impact is considered high if the stock is of poor health, and is vulnerable to collapse, and the fishery is significant in terms of levels of catches. However, it is clear that the 1st threat will have much greater detriment to the stock, and a more significant negative socio-economic effect. Thus, in an alternative approach the impact rating could be made to be dependent on the threat, and as such would be higher for the 1st threat than for the 2nd.

LIKELIHOOD

Depending on the threat, indicators can be developed to identify likelihood, or more simply, expert knowledge can be applied. Again, like for impact, in the EFCA methodology, the likelihood rating is assigned from 1 to 4;

1. Low - Could take place occasionally
2. Medium – Should occur from time to time
3. High - Will take place frequently
4. Very high - It is generally expected to take place

Table 5 - evaluation of the likelihood of a threat

Likelihood	low	Medium	high	very high
Colour code	green	yellow	orange	Red
Numerical code	1	2	3	4

The groups were encouraged to go through the threats and brainstorm to define for each one a score for the likelihood of their occurrence. Again, the scores were input into the excel spreadsheets. Since there was no quantitative data available for analysis, this was based upon the participants knowledge and experience. The groups were urged to note the rationale behind the rating to enable review and refinement in the future.

Note for possible work beyond the workshop

Likelihood: To further refine the approach to defining likelihood of threats occurring in the sub-region, quantitative data such as rates of infringements detected through inspections, or indicators of compliance levels could be identified and considered. Also, information regarding incentives for committing infringements, such as the economic gain, and dissuasive factors, such as the occurrence of high levels of control effort at sea and in port, and high levels of sanctions, could also be considered.

The results of the session can be found in Annexes 3 and 4 which provide the final risk matrix tables as completed by the groups over the course of the 4 practical sessions for the fisheries.

6.3. PRACTICAL SESSION 3 – DETERMINING THE RISK

The EFCA opened the session with a brief presentation recapping the theory behind the next step of a risk assessment; to calculate the risk score using the ratings of likelihood and impact.

A simple calculation is used: **impact x likelihood = risk score**

The choice of scoring scale for the rating of risk can be modified as deemed appropriate. For the groupwork of this workshop, the following generic scale was used as a pragmatic approach.

Table 5 a & b – Calculation of final risk score and level

		Likelihood			
		Low (1)	Medium (2)	High (3)	Very high (4)
Impact	Low (1)	Low (1)	Low (2)	Medium (3)	Medium (4)
	Medium (2)	Low (2)	Medium (4)	Medium (6)	High (8)
	High (3)	Medium (3)	Medium (6)	High (9)	Very high (12)
	Very high (4)	Medium (4)	High (8)	Very high (12)	Very high (16)

Risk	from	to
Low	1	2
Medium	3	7
High	8	11
Very high	12	16

Following on from the previous sessions, using the rating of likelihood and potential impact assigned, the groups calculated the risk scores, and subsequently the risk rating from low to very high for each threat associated with each of the fisheries. The results were noted in the excel spreadsheets. The groups then presented their work in plenary followed by an open discussion. The results of the session can be found in annex 3 which provides the final risk matrix tables as completed by the groups over the course of the 4 practical sessions for the fisheries.

6.4. PRACTICAL SESSION 4 – RECOMMENDING RISK TREATMENT MEASURES

The EFCA opened session 4 of the groupwork with a brief presentation reiterating the theory behind the next steps of the risk management system – using the results of the risk assessment for the planning of the future MCS activities. This involves identifying appropriate, effective and cost-efficient actions which can be applied by the control authorities to address as priority the most important threats in the fisheries; i.e. those that were identified as having the highest estimated risk scores. Such actions are termed 'risk treatment measures'.

In their groups the participants were encouraged to do this by considering the drivers (identified in practical session 1) of the threats to ensure that risk-treatments actions identified are tailor-made to address the real root cause of the threats. For example, if a driver of a certain threat, such as the non-compliance with a prohibition to catch a certain species, is a lack of awareness of the prohibition – an effective risk treatment measure would be to increase awareness of fishermen of the prohibition through an awareness campaign involving meetings/posters/leaflets/discussion with fishers during inspections. However, if the fishers are fully aware of the prohibition and the incentive for the violation is to simply increase the economic gain through the sale of such a highly valuable species, then an effective risk treatment measure could be to increase detection of the non-compliance through an increase in targeted inspections in the relevant fishery, and the subsequent increased application of more dissuasive sanctions.

For the groupwork it was proposed by the EFCA that for each fishery, the recommendations for addressing the threats with the two highest risk categories, i.e. high and very high, should be focused on. Working documents with examples of recommendations for the different types of measures (of coercive and non-coercive nature) were provided to the participants. Some of the treatment measures provided as examples were: i) raise the fishing industry awareness of regulations and their value; ii) create incentives for compliant behaviour; iii) improve authorities knowledge of risk factors (e.g. survey); iv) maximise the detection of offences through an increase of the number and quality of inspections; vi) improve monitoring (e.g. with observers) and vii) applying dissuasive sanctions.

The recommendations for risk treatments suggested by the groups were noted in the excel spreadsheets and the groups then presented their work in plenary followed by an open discussion. This step led to the completion of the final risk assessment matrix which can be found in Annexes 3 and 4.

6.5. RESULTS & CONCLUSIONS OF THE PRACTICAL SESSIONS

The complete results of the risk assessment exercise completed during the workshop are attached in Annex 3, with a finalised table per fishery worked on by each of the groups. In addition to working alone on some fisheries, there was some crossover; three groups both worked on generic artisanal fisheries, and all four groups worked on bottom trawling. It is evident in some cases that there is divergence between the risk scores identified by the individual groups for the same threats for the same fishery. As in most cases the default impact of 'high' (3) was applied by the groups, the differences mainly reflect the differences in likelihood rating assigned by different groups for the

same threats. This may reflect the true differences between the behaviour of fishermen operating in the waters of the different countries, or on the other hand, could be due to the subjectivity introduced in assigning a likelihood level based on the experience of the participants. If due to the latter, this highlights the value of refining the approach to reduce potential for subjectivity by basing likelihood on empirical data, such as infringement detection rate (number of infringements detected over a given time period), or through the development of compliance indicators. However, in the interim, as a pragmatic and conservative solution to reconcile the different results between groups, the highest risk rating assigned by any of the groups could be taken for each threat.

Whilst the exercise equipped the participants with the knowledge to perform such a risk assessment and enabled brainstorming on a regional basis, it also provided preliminary results. Ultimately, the methodology applied during this exercise can be adapted (see above boxes 'notes for possible work beyond the workshop') and refined to better fit the needs of the region, the information available and as seen as most appropriate by those applying it. Also, the results obtained here can be refined through the input of more information/data beyond the workshop. The FCWC could potentially play a role in the coordination of further developments in the methodology, and the collection and sharing of such data and information. Nonetheless, the results are a first step in the identification of the highest risks, and suggested risk treatment measures, and could be considered for implementation by the control authorities, to enable a focused application of fisheries control resources in an efficient and prioritised manner. Those highest risks (of risk high and very high) identified at the workshop through this exercise, and the corresponding risk treatment measures, are summarised as follows.

Table 6 – Merged summary results of the regional risk assessment exercise of the workshop for the 4 groups, showing (for the priority fisheries) the threats identified as the highest risk (of risk high and very high) and the corresponding suggested risk treatment measures. The complete results can be found in the full tables in annex 3.

Category of threat	Group	Risk level/ score	Risk treatment measures
Bottom Trawling			
2) Fishing with unauthorised or illegal gear (including small mesh size) or methods	1	Very High	Group 1: Enforcement (Arrest, prosecute, fine and seize nets) Observer (well trained, motivated to report) Policy (Manufacture, Sale of appropriate gears Interagency collaboration (Police, Army, Navy and all relevant stakeholders), effective intelligence gathering.) Group 2: Improve inspection of gears; standardize mesh sizes at regional level Group 3: Strengthened controls at sea, stricter application of sanctions Implementation of the observer programme Group 4: Sensitization of operators, strengthened controls of landings
	3 & 4	High	
3) Fishing in prohibited areas (including in areas reserved for artisanal fisheries)	1	High	Group 1: Patrol (Arial surveillance, sea patrols) Enforcement (Arrest, prosecute, fine and revoke license) Group 2: Finalize the implementation of the Vessel Monitoring System (VMS). Improve VMS monitoring capacity and undertake regular sea patrols Group 3: Implementation of VMS monitoring; stricter application of sanctions. Group 4: Improved VMS monitoring, sensitization, sanctions
	2, 3 & 4	Very High	
4) Use of forged documentation in relation to fishing activities	3	High	Group 2: Collaborate with regional and international partners for prompt verification Group 3: Communication on legal texts, stricter application of sanctions

Category of threat	Group	Risk level/ score	Risk treatment measures
5) Provision of false, inaccurate or incomplete information on catch and fishing activities (knowingly with the intent to deceive)	1	Very High	Group 1: Port inspection (intensify document control, inter agency collaboration, information sharing) Enforcement (Arrest, Prosecute, fine and revoke license) Group 2: Enhance the capacity of inspectors and sea going observers
	4	High	
6) Illegal transhipment of catch (including of by-catch into canoes and sale of fish at sea)	1	High	Group 1: Enforcement (Arrest, prosecute, fine revoke license) Observer (well trained, motivate, recalcitrant ones weed out) Beach control (Beach combing, no sale access, arrest canoes, arrest fish mongers) Group 2: Installation of solar transponders on all registered canoes Group 3: Regular patrols, application of sanctions
	2 & 3	Very High	
8) Targetting of unauthorised species (e.g. below minimum size/immature or valuable by-catch)	1 & 3	Very High	Group 1: Enforcement (Arrest, prosecute, fine, revoke license) intensify Port inspection (Measuring of fish. Observer (well trained in species identification, measurement of fish) Group 2: Revisit the sizes of mesh to meet international standards Group 3: Strengthened controls of landings, application of sanctions. Stricter enforcement of CITES and ICCAT.
9) Damage to artisanal gear by industrial fishing vessels or merchant vessels	4	Very High	Group 1: Education (markers, indicators by artisanal fishers) Conflict Resolution Group 2: Awareness for artisanal fishers and installation of transponders on canoes
Artisanal			
1) Fishing without / with an expired license/authorisation	1	Very High	Group 1: Awareness creation at political level/ fishers, Group 2: Provide some incentives for local fishers
	2	High	
2) Fishing with unauthorised or illegal gear (including small mesh size) or methods	1	Very High	Group 1: Awareness creation/education, (including regarding the consequences of using undersized gillnets). Provision of incentives (Subsidy) to the fishers, strict regulation on sale of correct gear. Group 2: Increase enforcement capacity Group 3: Reinforce control on gear at departure and landing. Application of stringent sanctions.
	2	High	
	3 (gillnetters)	Very High	
3) Fishing in prohibited areas (including in areas reserved for artisanal fisheries)	1	Very High	Group 1: Intensify patrol, Awareness creation/ education and enforcement of the law Group 3: Awareness raising of fishers of consequences of fishing in port areas. Application of stringent sanctions.
	3 (gillnetters)	High	
4) Use of forged documentation in relation to fishing activities	2	Very High	Group 2: Taxes should be remitted to local fishers based on their needs Group 3: Reinforce control – reinforce capacity of inspectors for the implementation of control. Application of stringent sanctions.
	3 (gillnetters)	High	

Category of threat	Group	Risk level/ score	Risk treatment measures
5) Provision of false, inaccurate or incomplete information on catch and fishing activities (knowingly with the intent to deceive)	2 & 3 (gillnetters)	High	Group 2: Proper marking of all boats, establish database Group 3: Reinforcement of sea patrols. Application of stringent sanctions.
6) Illegal transhipment of catch (including of by-catch into canoes and sale of fish at sea)	1 & 3 (gillnetters)	Very High	Group 1: Intensify sea patrols, Awareness creation/ education and enforcement of the law. Group 2: Installation of Solar Transponders on all canoes. Nigeria to employ more inspectors in all landing sites Group 3: Application of stringent sanctions.
	2	High (Nigeria not Liberia)	
8) Targetting of unauthorised species (e.g. below minimum size/immature or valuable by-catch)	1	Very High	Group 1: Intensify patrol, Awareness creation/ education and enforcement of the law. Group 2: Increase the mesh size of nets
	2	High	
Tuna seine			
3) Fishing in prohibited areas (including in areas reserved for artisanal fisheries)	1	High	Improve electronic Monitoring (VMS), Observers, enforcement, surveillance and patrol
Longliners			
5) Provision of false, inaccurate or incomplete information on catch and fishing activities (knowingly with the intent to deceive)	3	High	Application of recommendation 04-10 of ICCAT. Awareness raising of stakeholders. Strengthen the dockside inspection system. Set up an observer programme, apply sanctions and regular monitoring.

7. RISK TREATMENT MEASURES - IMPLEMENTATION

Taking the risk treatment measures identified in the EFCA led practical sessions, SIF led a discussion on the approach authorities should take to promote and facilitate their implementation. Measures need to be broken down into tangible actions, areas for cooperation with other bodies identified, and responsibilities assigned. The budgets required (including external funding needs) and the subsequent feasibility need to be recognised, and the actions broken down into short, medium and long term steps according to priorities.

Following such a process will then lead to an implementation plan with priorities and requirements defined.

8. SPECIAL SESSION – DOCUMENT VERIFICATION

Mr Yvergniaux presented on the issue of vessel identity fraud and how this is facilitated by widespread document forgery. The global spread of the issue has been underlined in a [2018 Interpol Purple Notice](#), which reflects what has been witnessed at the African level through the West Africa and the FISH-i Africa Task Forces: vessel operators using falsified documents in an attempt to hide illegal activities or avoid obligations and costs. Common types of vessel identity fraud include registry abuse, use of false vessel identifiers, presentation of fraudulent fishing authorizations, etc.

Document verification therefore plays a central role when conducting risk assessments at vessel level, whether it is in the framework of licensing/flagging due diligence, port entry risk assessment, etc. For that reason, TMT and SIF have jointly prepared a [document verification manual focused on vessel identity issues](#).

The manual was briefly introduced to participants. Common types of vessel identity fraud were discussed and examples of false documents facilitating those crimes were presented.

Key steps to be taken for checking the authenticity of documents were then presented, using cases and examples from East and West Africa where forgeries had been identified in relation to illegal fishing activity. Those include visual analysis steps (checking of document characteristics, security features, comparison with genuine documents previously obtained, etc.); crosschecking steps (crosschecking with other vessel documents, verification of vessel identifiers, etc.); and verification steps (authentication with issuing authorities, regional/international information requests, use of external verification sources, etc.).

Participants were introduced to several online sources of information relating to fishing vessel identity and registration which can be very useful when undertaking those steps. They were invited to spend a few minutes visiting those websites before the practical exercises begin.

The practical session consisted in a series of scenario-based exercises where participants were given sets of vessel documents (mock-ups) to analyse and comment on. Most exercises were directly inspired from real-life identity fraud cases initiated as part of the WATF and the FISH-i Africa Task Force. Participants were invited to use all methods presented in order to detect forgeries and determine the most appropriate course of action. Participants went through the exercises in small groups facilitated by instructors from TMT, SIF and EFCA.

At the end of the practical session, participants were reminded that the verification steps and external information sources presented are not only useful for detecting vessel identity fraud: they are also crucial to understand a vessel's operational background and provide elements of information to assess potential risks associated with its flagging, licensing, entry to port, etc. Broader use of the manual is therefore encouraged, so that key verification steps are integrated into routine MCS checks.

9. CONCLUSIONS AND RECOMMENDATIONS

The workshop was completed with the following conclusions and recommendations regarding risk management:

Conclusions:

Risk Assessment is a useful tool to identify the main risks, and the best way to treat those risks to enable a focused application of fisheries control in an efficient and prioritized manner by the enforcement authorities.

Risk assessment can be used both at national and regional levels to identify common risks on a fishery level, and the best way to address those risks through management and control measures.

Risk assessment can also be applied to specific MCS processes, such as port controls, transhipment at sea, due diligence conducted on documents and others.

Recommendations from the workshop:

- **A regional risk assessment of fisheries compliance** is a useful tool to inform management decisions, to address the highest risks of non-compliance and help the fight against IUU.

- **A regional risk assessment should be applied** in the FCWC region to enable a more focused and effective application of fisheries control resources

- On a **national level**, each country should refine and build upon the results of the risk assessment performed at the workshop to ensure its relevance.

- **The risk treatment measures** identified should be further elaborated by each of the member countries into tangible actions, with a consideration of costs and feasibility, and should be considered **for implementation.**

- Through **continued cooperation** between all the member countries and the FCWC, **the methodology** applied during the workshop should be **built upon and refined** as considered most appropriate by the member countries. This should be based on additional information and data available (for example of the health of fish stocks (linked to potential impact), the levels of catches (linked to potential impact), the frequency of occurrence of particular non-compliances (linked to likelihood) etc.

- The refined risk assessment should be **performed regularly as part of standard practice**. Another workshop would be beneficial as the forum in which to do further this.

- Each country should assign a **lead person** for risk assessment to facilitate the continued work after this workshop, with a view to establishing risk assessment within the working practices of the authorities.

- In addition to a risk assessment performed at fishery level, complementary risk assessments should be performed on all levels, for example to better **target vessels** to inspect, or even to **identify areas of specific importance during inspections**.

For future workshops, if possible, one participant remarked that it would be useful to have an audio record to ensure discussions are captured.

10. CLOSING OF THE MEETING

The Director of ISMI, Abe Lazare thanked all for attending, then all participants received a certificate for the completion of the 3-day workshop on risk management in fisheries. The workshop was closed on 19 February 2020 at 17h00.

ANNEX I – AGENDA OF THE WORKSHOP

Time	Agenda item	Indicative content	Speakers
Day 1 **Monday - 17 February 2020**			
08:30 - 09:00	**Arrival and registration of participants/distribution of documents**		
09:00 - 10:00	***Opening session***	• Institutional film of the ARSTM • Speeches: 　1) The Director-General of the ARSTM or his representative 　2) The Secretary General of FCWC (or his representative) • Presentation of delegations/tour de table	Institut de Sécurité Maritime Interrégional (ISMI) ISMI Fisheries Committee for the West Central Gulf of Guinea (FCWC) / All
10:00 - 10:15	**Coffee break and group photo**		
10:15 - 12:00	***Introduction***	• Presentation of the PESCAO Project (funded by the European Union) • Presentation of the Fisheries Intelligence and MCS support Project to the West Africa Task Force (WATF) (Norad funded) • Access to fisheries and non-compliance issues - trends since the establishment of the WATF	European Fisheries Control Agency (EFCA) Trygg Mat Tracking (TMT) TMT
12:00 - 13:00	***Understanding the risk in fisheries – The theory***	• What is risk assessment and why do we do it in fisheries: basic principles, definitions and steps in the process, and the methodology for EFCA's regional risk management.	EFCA

		• Different situations where a risk assessment is needed: 1) as part of the implementation of the Port State Measures Agreement (PSMA); 2) as part of due diligence processes (flagging, licensing, reefer operations, etc.)	Stop Illegal Fishing (SIF)/TMT
13:00 - 14:00	**Lunch**		
14:00 - 15:30	***Understanding the risk in fisheries - In the region***	• Analysis of reefer operations and associated IUU related threats for the FCWC region • Understanding the activity of the fleets in the region and the threats they represent in terms of non-compliance • Identification of the fisheries units that the group will work with	TMT EFCA EFCA to introduce, followed by open discussion involving all.
15:30 - 16:00	**Coffee Break**		
16:00 - 17:30	***Practical session 1 –*** ***Threat identification and characterization at sub-regional level***	• Practical session to define threats by fisheries • Report to plenary by the participants	EFCA to introduce, followed by group work involving all.

ANNEX II – LIST OF PARTICIPANTS

Country/organisation	Name
Participants	
Togo	Mr. Kokouvi Dziedzom ASSOGBA
	Mr. Pikliwoé KATANGA
	Mr Kao Kadanga
Bénin	Mr. Urbain BRITO
	Mr. Bernard TOSSI
	Mr. Roméo KINKPE
Nigéria	Mr. Usman GARBA
	Mr. Ajeigbe. Oluwadare ABIODUN
	Mr.Shettima Hassan. MODU
Ghana	Alex Yao SARBAH
	Mr. Andrews Omari AGYEKUM
	Mr. Emmanuel Atiso AMEVOR
Liberia	Mr. Patrick DAVIS
	Mrs. Ellen TEEWON
	Mr. Fitz Boy DIAR
Cote d'Ivoire	Mrs. Hermance GOSSAN
	Mr. Maxime DIOMANDE
	Mr. Yapo Jean Gauthier KOFFI
	Mr. Djolaud Hervé KILI
Organisers	
FCWC	Seraphin Nadje DEDI
	Kofi Arhin HAYFORD
	Joel Bio BATA
PESCAO project / TMT regional coordinator	Viviane KOUTOB
Stop Illegal Fishing	Mathew MARKIDES
	Per Erik BERGH
TMT	Yann YVERGNIAUX
EFCA	Justine JURY
	Bruno MORIN

Group: 1 (Ghana & Nigeria)
Fishery: Artisanal

Category of threat	Risk identification		Risk analysis		Risk evaluation	Risk treatment
	Threat	Characterization (details/drivers)	Impact	Likelihood	Risk level/score	Risk treatment measures
1) Fishing without / with an expired license/authorisation	Yes (Ghana only - N/A for Nigeria)	Tax Evasion and politics (Polical will)	3	4	Very High	Awareness creation at political level/ fishers
2) Fishing with unauthorised or illegal gear (including small mesh size) or methods	Under size Mesh Size, mono filament nets	More catches, meet up target and available Market (Poverty)	4	4	Very High	Awareness creation/education, provision of incentives (Subsidy) to the fishers, strict regulation on sale of correct gear.
3) Fishing in prohibited areas (including in areas reserved for artisanal fisheries)	Yes	More fish and targeted fishery with less fishing effort (oil and gas installation) (Weak enforcement)	4	4	Very High	Intensify patrol, Awareness creation/ education and enforcement of the law
6) Illegal transhipment of catch (including of by-catch into canoes and sale of fish at sea)	Yes	Less effort and more market to increase income (Weak enforcement)	4	4	Very High	Intensify patrol, Awareness creation/ education and enforcement of the law
7) Trading in illegal fish (knowingly purchasing, selling, importing or exporting fish caught illegally)	Yes	Tax Evasion and avoid payments of License fee to maximise profit (Designated Port)	3	2	Medium	Intensify patrol, Awareness creation/ education and enforcement of the law
8) Targetting of unauthorised species (e.g. below minimum size/immature or valuable by-catch)	Yes	More catches and more profit	4	4 (Weak enforcement)	Very High	Intensify patrol, Awareness creation/ education and enforcement of the law

Group: 1 (Ghana & Nigeria)
Fishery: Tuna/seiner

Category of threat	Risk identification		Risk analysis		Risk evaluation	Risk treatment
	Threat	Characterization (details/drivers)	Impact	Likelihood	Risk level/score	Risk treatment measures
3) Fishing in prohibited areas (including in areas reserved for artisanal fisheries)	YES	target more fish and other species	4	2	High	Improve electronic Monitoring (VMS), Observers, enforcement, surveillance and patrol
4) Use of forged documentation in relation to fishing activities	YES	Tax evasion and avoid payments of License fee to maximise profit	3	2	Medium	Intensify port inspection, enforcement of the law
5) Provision of false, inaccurate or incomplete information on catch and fishing activities (knowingly with the intent to deceive)	YES	Tax evasion and avoid payments of License fee to maximise profit and to beat their quota	3	2	Medium	Observer reporting system, Intensify port inspection, electronic logging system,
8) Targeting of unauthorised species (e.g. below minimum size/immature or valuable by-catch)	YES	More profit	3	2	Medium	Observers and port inspections,
9) Damage to artisinal gear by industrial fishing vessels or merchant vessels	YES	lack of awareness on the part of Artisanal	2	2	Medium	Subsidising the cost of indicators/market Awareness creation educating the fishers

Group: 1 (Ghana & Nigeria)
Fishery: Bottom trawling

Category of threat	Risk identification		Risk analysis		Risk evaluation	Risk treatment
	Threat	Characterization (details/drivers)	Impact	Likelihood	Risk level/score	Risk treatment measures
2) Fishing with unauthorised or illegal gear (including small mesh size) or methods	Under size Mesh Size,	More catches, meet up target and available Market. Canoes take illegal nets to trawlers at sea and at end of the trip retrieve them and store them inaccessible places	4	4	Very High	Enforcement (Arrest, prosecute, fine and seize nets) Observer (well trained, motivated to report) Policy (Manufacture, Sale of appropriate gears). Interagency collaboration (Police, Army, Navy and all relevant stakeholders), effective intelligence gathering.
3) Fishing in prohibited areas (including in areas reserved for artisanal fisheries)	Yes	More fish and targeted fishery with less fishing effort	4	2	High	Patrol (Arial surveillance, sea patrols) Enforcement (Arrest, prosecute, fine and revoke license)
5) Provision of false, inaccurate or incomplete information on catch and fishing activities (knowingly with the intent to deceive)	Under reporting of information in logbooks, Selling Fish on Sea to avoid tax	Tax Evasion, Illegal Transshipment, make more money	4	4	Very High	Port inspection (intensify document control, interagency collaboration, information sharing) Enforcement (Arrest, Prosecute, fine and revoke license)
6) Illegal transhipment of catch (including of by-catch into canoes and sale of fish at sea)	Yes	Tax Evasion and avoid payments of License fee and more catches	4	2	High	Enforcement (Arrest, prosecute, fine revoke license) Observer (well trained, motivate, recalcitrant ones weed out) Beach control (Beach combing, no sale access, arrest canoes, arrest fish mongers)
7) Trading in illegal fish (knowingly purchasing, selling, importing or exporting fish caught illegally)	Yes	Tax Evasion and avoid payments of License fee to maximise profit	3	2	Medium	Market survey to arrest illegal fish sellers, Catch certification should be based on iuu compliant.
8) Targeting of unauthorised species (e.g. below minimum size/immature or valuable by-catch)	Yes	More catches and more profit also illegal transshipment	4	3	Very High	Enforcement (Arrest, prosecute, fine, revoke license) intensify Port inspection (Measuring of fish. Observer (well trained in species identification, measurement of fish)
9) Damage to artisanal gear by industrial fishing vessels or merchant vessels	Yes	Lack of awareness of the acts	3	2	Medium	Education (markers, indicators by artisanal fishers) Conflict Resolution

Group: 2 (Liberia & Nigeria)
Fishery: Bottom trawling

Category of threat	Risk identification		Risk analysis		Risk evaluation	Risk treatment
	Threat	Characterization (details/drivers)	Impact	Likelihood	Risk level/score	Risk treatment measures
1) Fishing without / with an expired license/authorisation	YES	Illegal fishers test the monitoring capacity of third countries. Fishing for more as compare to regulatory regime, avoid tax payment	3	1	Medium	Increase of fines to address each infraction committed
2) Fishing with unauthorised or illegal gear (including small mesh size) or methods	YES	This practice is commonly traced in the small-scale fisheries. Mainly trawlers, shrimpers can sell fish (bycatch) on the side. To maximise profit	3	2	Medium	Improve on inspection of gears and standardized mesh sizes at regional level
3) Fishing in prohibited areas (including in areas reserved for artisanal fisheries)	YES	On a limited scale, especially in Liberia	3	1	Medium	Improve the monitoring capacity and regular sea patrols
		Bottom trawlers may wish to trawl in the no go zones to increase their catch	3	4	Very High	Finalized the implementation of Vessel Monitoring System (VMS) - NIGERIA
4) Use of forged documentation in relation to fishing activities	YES	Purpose to fish illegally and evade prosecution	3	1	Medium	Collaborate with regional and international partners for prompt verification
5) Provision of false, inaccurate or incomplete information on catch and fishing activities (knowingly with the intent to deceive)	YES	Underreporting of catch in hold	3	2	Medium	Enhance the capacity of inspectors and sea going observers
		Underreporting of prohibited catch that is retained. No bycatch retained	3	2	Medium	
		Dishonest recording of fishing areas, No recording of transhipment	3	1	Medium	
6) Illegal transhipment of catch (including of by-catch into canoes and sale of fish at sea)	YES (Likelihood is low-Liberia)	Observer is deployed on every fishing trip	3	1	Medium	Installation of Sorla Transponders on all register canoes
		Nigeria need Observer Program	3	4	Very High	Installation of Sorla Transponders on all register canoes
7) Trading in illegal fish (knowingly purchasing, selling, importing or	YES	On a low scale	3	2	Medium	Create awareness in fishing communities concerning buying of illegal fish (Boats/Canoes)

exporting fish caught illegally)						Create awareness in fishing communities concerning buying of illegal fish (Boats/Canoes)
8) Targetting of unauthorised species (e.g. below minimum size/immature or valuable by-catch)	YES	Purpose to catch smaller species	3	1	Medium	Revisit the sizes of mesh to meet international standards
9) Damage to artisinal gear by industrial fishing vessels or merchant vessels	YES	During entry of Industrial vessels into port	3	1	Medium	Awareness for artisanal fishers and installation of transponders on canoes

Group: 2 (Liberia & Nigeria)
Fishery: Artisanal

| Category of threat | Risk identification | | Risk analysis | | Risk evaluation | Risk treatment |
	Threat	Characterization (details/drivers)	Impact	Likelihood	Risk level/score	Risk treatment measures
1) Fishing without / with an expired license/authorisation	YES	Amount paid for license depends on engine power/capacity	3	3	High	Provide some incentives for local fishers
2) Fishing with unauthorised or illegal gear (including small mesh size) or methods	YES (Using monofilament net - Liberia	Not enough fund to buy the normal nets	3	3	High	Increase enforcement capacity
4) Use of forged documentation in relation to fishing activities	YES	Refuse to pay tax	3	4	Very High	Taxes should be remitted to local fishers base on their needs
5) Provision of false, inaccurate or incomplete information on catch and fishing activities (knowingly with the intent to deceive)	YES (Fake license, one company with multiple boats using one license-Liberia)	Avoid paying license fees	3	3	High	Proper marking of all boats, establish database
6) Illegal transhipment of catch (including of by-catch into canoes and sale of fish at sea)	Liberia YES	Liberia - Likelihood is low because of observer's presence	3	1	Medium (Liberia)	Installation of Sorla Transponders on all canoes
	Nigeria YES		3	3	High (Nigeria)	Nigeria to employ more inspectors in all landing sites
7) Trading in illegal fish (knowingly purchasing, selling, importing or exporting fish caught illegally)	YES (Especially in the small-scale fisheries)	Likelihood is low	3	2	Medium	Discourage buying from boats without license
8) Targetting of unauthorised species (e.g. below minimum size/immature or valuable by-catch)	YES (Still target unauthorized species)	Use of illegal gears	3	3	High	Increase the mesh size of nets
9) Damage to artisinal gear by industrial fishing vessels or merchant vessels	YES (LOW)	Lack of knowledge on fishing grounds	3	1	Medium	Installation of Transponder for proper monitoring

Group: 3 (Côte d'Ivoire, Benin, Togo)
Fishery: Bottom Trawl

Catégorie de menace	Recensement des risques		Analyse des risques		Pays concernés	Évaluation des risques	Traitement des risques
	Menace	Caractérisation (détails/facteurs)	Impact	probabilité		Niveau/score du risque	Mesures de traitement des risques
1) Pêche sans/avec licence/autorisation expirée	X	Autorisation expirée	3	1		Medium	
2) Pêche au moyen d'engins non autorisés ou illégaux (y compris le petit maillage) ou méthodes	X	Non respect du maillage	3	2	Bénin	Medium	Renforcement des contrôles en mer; Application de la sanction en vigueur
		Port de chaussettes	3	3	Togo	High	Mise en œuvre du programme d'observateur
3) Pêche dans les zones interdites (y compris dans les zones réservées à la pêche artisanale)	X	Pêche en deçà de la zone autorisée	3	4	Tout	Very High	Mise en œuvre la surveillance des navires par VMS; Application de la sanction en vigueur
4) Utilisation de faux documents relatifs aux activités de pêche	X	Fausse déclaration sur la technique de pêche	3	1	Tout	Medium	
		Non remplissage du journal de pêche	3	3		High	Communication sur les textes règlementaires. Application de la sanction en vigueur
5) Fourniture de renseignements faux, inexacts ou incomplets sur les captures et les activités de pêche (sciemment avec l'intention frauduleuse)	X	Fausse déclaration sur la technique de pêche	3	1		Medium	
6) transbordement illicite de captures (prises accessoires dans les canoës et vente de poissons en mer)	X	Vente des captures en mer sans autorisation préalable à d'autres embarcations	3	4		Very High	Organisation régulière des patrouilles; Application de la sanction en vigueur
		Echange de produits en mer contre les services de tout genre sans autorisation	3	4		Very High	Organisation régulière des patrouilles; Application de la sanction en vigueur
8) ciblent les espèces non autorisées (par exemple, en dessous de la taille minimale, des prises accessoires immatures ou des prises accessoires précieuses)	X	Pêche d'espèces interdites (Motiovation: Recherche de conconbre de mer)	3	4		Very High	Renforcement de la surveillance des débarquements ; Application de la sanction en vigueur
		Prise accessoires imatures	3	4		Very High	Renforcement de la surveillance des débarquements ;

			🟧	🟥	🟥	Application de la sanction en vigueur
	Recherche d'ailerons de requins. (Motivation: Maximisation du profit)	3	4		Very High	Application stricte des dispositions de la CITES et de l'ICCAT ; Application de la sanction en vigueur

Group: 3 (Côte d'Ivoire, Benin, Togo)
Fishery: Artisanal Maillant (gill nets)

Catégorie de menace	Recensement des risques		Analyse des risques		Évaluation des risques	Traitement des risques
	Me nac e	Caractérisation (détails/facteurs)	Imp act	prob abilit é	Niveau /score du risque	Mesures de traitement des risques
1) Pêche sans/avec licence/autorisation expirée	X	Autorisation expirée (Motivation: Eviter le payement d'une licence)	3	1	Moyen	
2) Pêche au moyen d'engins non autorisés ou illégaux (y compris le petit maillage) ou méthodes	X	Non respect du maillage (Motivation: Optimiser les prises)	3	4	Tres Eleve	Sensibilisation des acteurs sur les conséquences liées à l'utilisation des filets à mailles fines; Renforcement des contrôles des engins de pêche avant le départ et au débarquement ; Application de la sanction en vigueur
		Fausse déclaration sur l'engin et la technique de pêche (Motivation: Maximiser le profit; éviter les taxes)	3	4	Tres Eleve	Renforcement des contrôles des engins de pêche avant le départ, pendant la pêche et à l'arrivée ; Application de la sanction en vigueur
3) Pêche dans les zones interdites (y compris dans les zones réservées à la pêche artisanale)	X	Pêche en deçà de la zone autorisée (Motivation: Ciblage d'autres espèces)	3	1	Moyen	
		Pêche dans une aire marine protégée (Motivation: Ciblage d'autres espèces)	3	1	Moyen	
		Pêche en zone portuaire	3	3	Eleve	Sensibilisation des acteurs de la pêche sur les conséquences de la pêche en zone portuaire ; Application de la sanction en vigueur
4) Utilisation de faux documents relatifs aux activités de pêche	X	Fausse déclaration sur la technique de pêche	3	3	Eleve	Renforcement des contrôles ; Renforcement des capacités des Inspecteurs dans la mise en œuvre des contrôles. Application de la sanction en vigueur
		Non remplissage du journal de pêche	3	1	Moyen	
		Utilisation d'une fausse carte professionnelle	3	1	Moyen	

		Permis de pêche falcifié	3	1	Medium	
5) Fourniture de renseignements faux, inexacts ou incomplets sur les captures et les activités de pêche (sciemment avec l'intention frauduleuse)	X	Vente des captures en mer sans autorisation préalable à d'autres embarcations	3	3	Eleve	Renforcement des patrouilles en mer. Application de la sanction en vigueur
6) transbordement illicite de captures (prises accessoires dans les canoës et vente de poissons en mer)	X	Echange de produits en mer contre les services de tout genre sans autorisation	3	4	Tres Eleve	Renforcement des patrouilles en mer. Application de la sanction en vigueur
		Dissimulation de captures	3	3	Eleve	Renforcement des patrouilles en mer. Application de la sanction en vigueur

Group: 4 (Côte d'Ivoire, Benin, Togo)
Fishery: Chalut du Fond (bottom trawl)

Catégorie de menace	Recensement des risques		Analyse des risques		Évaluation des risques	Traitement des risques
	Menace	**Caractérisation (détails/facteurs)**	**Imp act**	**pro bab ilité**	**Niveau/s core du risque**	**Mesures de traitement des risques**
2) Pêche au moyen d'engins non autorisés ou illégaux (y compris le petit maillage) ou méthodes	Utilisation de maillage non autorisé	utilisation de vieux filets ou ramoder à de filet de petites tailles. quête d'une grande variete de poissons	3	3	ELEVE	sensibiliser les acteurs , et Renforcer du contrôle des debarquements
3) Pêche dans les zones interdites (y compris dans les zones réservées à la pêche artisanale)	pêche près des côtes en dessous de la zone autorisée	recherche de plus de ressources ou d'especes specifiques. pêche dans les zones reservés aux pêcheurs artisans. conflits pêcheurs artisans et industrielles	3	4	TRES ELEVEE	Surveiller de plus près leurs activités par VMS,sensibiliser,sanc tionner
5) Fourniture de renseignements faux, inexacts ou incomplets sur les captures et les activités de pêche (sciemment avec l'intention frauduleuse)	renseignement des captures inexacts, imcomplet	journal de pêche mal renseigné. capture sous declaré. tendance à pêcher dans les zones interdites,masquer la tracibilité des captures	3	3	ELEVE	Nd
6) transbordement illicite de captures (prises accessoires dans les canoës et vente de poissons en mer)		masquer les captures des zones de frayere,dissimuler les prises acessoires	3	2	MOYEN	
8) ciblent les espèces non autorisées (par exemple, en dessous de la taille minimale, des prises accessoires immatures ou des prises accessoires précieuses)	cible des espèces immatures	espèces très prisées economiquement rentable	3	4	TRES ELEVEE	
	cible des espèces de petites tailles	augmenter leur captures	3			
	cible des espèces interdites (les tortues etc)		3			
9) Dommage à l'engin artisanale par des navires de pêche ou des navires marchands	conflit pêcheurs artisans et industriels	recherche de plus de ressources ou d'especes specifiques	3	4	TRES ELEVEE	
	destruction des engins de pêches artisanale	maximiser leur captures	3			

Group: 4 (Côte d'Ivoire, Benin, Togo)
Fishery: Palangriers (longliners)

Catégorie de menace	Recensement des risques		Analyse des risques		Évaluation des risques	Traitement des risques
	Menace	Caractérisation (détails/facteurs)	Impact	Probabilite	Niveau/ score du risque	Mesures de traitement des risques
1) Pêche sans/avec licence/autorisation expirée	pêche sans autorisation dans les zee etrangers et haute mer	recherche d'espèces cibles ou maximiser leur profit	3	2	MOYEN	Differencier les autorisation de pêche (pêche en zee et pêche en haute mer) Renforcer le système de suivi et contrôle satellitaire pour contrôler leurs activités
5) Fourniture de renseignements faux, inexacts ou incomplets sur les captures et les activités de pêche (sciemment avec l'intention frauduleuse)	renseignement inexact sur les captures	les prises accessoires sont eleveés et necessité de les camoufler	3	3	ELEVE	appliquer la recommandation 04 -10 de l'iccat sensibilisation des acteurs renforcer les dispositif d'inspection à quai mettre en place un programme d'observateur sanctions et surveillance regulière
6) transbordement illicite de captures (prises accessoires dans les canoës et vente de poissons en mer)	transbordement illicite de leur prises. transbordement illicite de leur prises accessoires	transbordement de leur prises accessoires aux reefers,ou à d'autres navires	3	2	MOYEN	Respecter et appliquer de la reglementation relatif au transbordement
7) Échanges de poissons illégaux (achat, vente, importation ou exportation de poisson illégalement pêché en connaissance de cause)	echanges de poissons illegaux	tansborder les captures vers des navires etrangers en destination d'autres pays	3	2	MOYEN	Respecter et appliquer de la reglementation relatif au transbordement

Merged for all groups
Bottom Trawling

Category of threat		Risk identification		Risk evaluation	Risk treatment
	Group	Threat	Details	Risk level/score	Risk treatment measures
1) Fishing without / with an expired license/authorisation	3	Expired authorization		Medium	
	2	No license		Medium	Increase fines and apply them more strictly for each infraction committed
	2	?			
2) Fishing with unauthorised or illegal gear (including small mesh size) or methods	1	Use of nets with under-sized mesh		Very High	Enforcement (Arrest, prosecute, fine and seize nets) Observer (well trained, motivated to report) Policy (Manufacture, Sale of appropriate gears)
	1	Use of nets with under-sized mesh	Canoes take illegal nets to trawlers at sea and at end of the trip retrieve them and store them in inaccessible places		Interagency collaboration (Police, Army, Navy and all relevant stakeholders), effective intelligence gathering.
	3	Use of nets with under-sized mesh		Medium	Strengthened controls at sea, stricter application of sanctions
	3	Use of nets with under-sized mesh	Illegal cod-end	High	Implementation of the observer programme
	4	Use of nets with under-sized mesh	Use of old nets or parts of nets with small mesh size	High	Sensitization of operators, strengthened controls of landings
	2	Use of nets with under-sized mesh	Common with shrimp trawlers	Medium	Improve inspection of gears; standardize mesh sizes at regional level
3) Fishing in prohibited areas (including in areas reserved for artisanal fisheries)	1	?		High	Patrol (Arial surveillance, sea patrols) Enforcement (Arrest, prosecute, fine and revoke license)
	3	Fishing within prohibited distance to shore		Very High	Implementation of VMS monitoring; stricter application of sanctions
	4	Fishing within prohibited distance to shore		Very High	

	4	Fishing in zones reserved for small-scale fisheries			
	4	Fishing in zones reserved for small-scale fisheries	Conflicts between small-scale and industrial fisheries		Improved VMS monitoring, sensitization, sanctions
	2	Fishing within prohibited distance to shore	On a limited scale in Liberia	Medium	Improve VMS monitoring capacity and undertake regular sea patrols
	2	Fishing within prohibited distance to shore	On a higher scale in Nigeria	Very High	Finalize the implementation of the Vessel Monitoring System (VMS)
4) Use of forged documentation in relation to fishing activities	3	Misreporting of gear used		Medium	
	3	Failure to complete fishing logbook		High	Communication on legal texts, stricter application of sanctions
	2	Vessel identity fraud		Medium	Collaborate with regional and international partners for prompt verification
5) Provision of false, inaccurate or incomplete information on catch and fishing activities (knowingly with the intent to deceive)	1	Under reporting of catches		Very High	Port inspection (intensify document control,,inter agency collaboration, information sharing) Enforcement (Arrest, Prosecute, fine and revoke license)
	3	Misreporting of gear used		Medium	
	4	Inaccurate or incomplete catch reporting	Incomplete logbook	High	
	4	Under reporting of catches			
	4	Inaccurate or incomplete catch reporting			
	2	Under reporting of catches		Medium	Enhance the capacity of inspectors and sea going observers
	2	Inaccurate or incomplete catch reporting	Non reporting of prohibited species caught	Medium	
	2	Inaccurate or incomplete catch reporting	Non reporting of discarded catch		
	2	Inaccurate or incomplete catch reporting	Non reporting of transhipment operations		
	2	Inaccurate or incomplete catch reporting	Dishonest recording of fishing areas	Medium	
6) Illegal transhipment of catch (including of by-catch into canoes and	1	Illegal transhipment at sea		High	Enforcement (Arrest, prosecute, fine revoke license) Observer (well trained, motivate, recalcitrant ones weed out) Beach control (Beach combing, no sale access, arrest canoes, arrest fish mongers)

sale of fish at sea)	1	Illegal transhipment at sea			
	3	Illegal transhipment at sea	Transfer of catch to other vessels at sea without prior autorization	Very High	Regular patrols, application of sanctions
	3	Illegal transhipment at sea	Exchange of catch for services at sea without prior authorization	Very High	Regular patrols, application of sanctions
	4	Illegal transhipment at sea		Medium	
	2	Illegal transhipment at sea	On a limited scale in Liberia (observer deploy on every fishing trip)	Medium	Installation of solar transponders on all registered canoes
	2	Illegal transhipment at sea	On a higher scale in Nigeria (no observer programme)	Very High	Installation of solar transponders on all registered canoes
7) Trading in illegal fish (knowingly purchasing, selling, importing or exporting fish caught illegally)	1	?		Medium	Market survey to arrest illegal fish sellers, Catch certification should be based on iuu compliant.
	2	Buying of illegal fish by coastal communities		Medium	Create awareness in fishing communities concerning buying of illegal fish (Boats/Canoes)
	2	Buying of illegal fish by coastal communities		Medium	Create awareness in fishing communities concerning buying of illegal fish (Boats/Canoes)
8) Targetting of unauthorised species (e.g. below minimum size/immature or valuable by-catch)	1	?		Very High	Enforcement (Arrest, prosecute, fine, revoke license) intensify Port inspection (Measuring of fish. Observer (well trained in species identification, measurement of fish)
	3	Targeting of illegal species (e.g. turtles)		Very High	Strengthened controls of landings, application of sanctions
	3	Targeting of juveniles	By-catch of juveniles	Very High	Strengthened controls of landings, application of sanctions
	3	Targeting of shark fins illegally	Searching for shark fins	Very High	Stricter enforcement of CITES and ICCAT provisions, application of sanctions
	4	Targeting of juveniles		Very High	
	4	Targeting of smaller species of fish			
	4	Targeting of illegal species (e.g. turtles)			
	2	Targeting of smaller species of fish		Medium	Revisit the sizes of mesh to meet international standards

9) Damage to artisinal gear by industrial fishing vessels or merchant vessels	1	Destruction of small-scale fishing gear	Lack of awareness of the acts	Medium	Education (markers, indicators by artisanal fishers) Conflict Resolution
	2	Destruction of small-scale fishing gear	During entry of Industral vessels into port	Medium	Awareness for artisanal fishers and installation of transponders on canoes
	4	Conflict between small-scale and industrial fisheries		Very High	
	4	Destruction of small-scale fishing gear			