



STATUS OF MONITORING, CONTROL AND SURVEILLANCE SYSTEMS IN EAST AFRICA

*Strengthening National and Regional Capacities for
Combating Illegal, Unreported and Unregulated Fishing*

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List of Acronyms

AU	African Union
AU-IBAR	African Union - InterAfrican Bureau for Animal Resources
CAADP	Comprehensive Africa Agriculture Development Programme
CAMFA	Conference of African Ministers of Fisheries and Aquaculture
CARICOM	Caribbean International Community
CFRAMP	CARICOM Fisheries Resource Assessment and Management Programme
ESA-IO	Eastern and Southern African and Indian Ocean
FACT	Fisheries Analytical Capacity Tank
FAD	Fish aggregating device
FAO	Food and Agriculture Organization
FFA	Forum Fisheries Agency
FMC	Fisheries Monitoring Centre
FPA	Fisheries Partnership Agreement
FPV	Fisheries Protection Vessel
GDP	Gross Domestic Product
IFM	Integrated fisheries monitoring
ILO	International Labour Organization
IMO	International Maritime Organization
IOC	Indian Ocean Commission
IOTC	Indian Ocean Tuna Commission
IPOA	International Plan of Action
IPOA-IUU	International Plan of Action to Prevent, Deter and Eliminate Illegal, Unreported and Unregulated Fishing
IRCS	International Telecommunication Union Radio Call Signs
ISSF	International Seafood Sustainability Foundation
LOSC	United Nations Convention on the Law of the Sea
MCS	Monitoring, control and surveillance
MT	Metric tonne
NEPAD	New Partnership for Africa's Development
NFDS	Nordenfjeldske Development Services
OECS	Organization of Eastern Caribbean States
REC	Regional Economic Communities
RFB	Regional Fishery Body
RFMO	Regional fisheries management organization
SADC	Southern African Development Community
SIF	Stop Illegal Fishing
SRFC	Northwest Africa Subregional Fisheries Commission
SWIOFC	Southwest Indian Ocean Fisheries Commission
SWOT	Strengths, weaknesses, opportunities and threats
VMS	Vessel monitoring system
WWF	World Wildlife Fund for Nature

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Executive Summary

1. This Technical Report reviews the current status of Monitoring, Control and Surveillance (MCS) in East Africa in order to provide a baseline document of relevant information and knowledge that will enable the implementation of an effective system in the region. The specific objectives addressed in this document include: an examination of the legal framework for MCS; review of regional policies and arrangements; identification and assessment of the capacity of East African States; identification of challenges related to capacity building; and proposals for an effective regional or sub-regional framework. There have been a number of studies on MCS in East Africa and the wider African region and most of these studies have focused on technical and institutional capacity assessment, as well as examination of domestic, sub-regional and regional IUU fishing issues. This Technical Report addresses a gap in previous studies by providing an analysis of the legal requirements to implement an effective MCS in East African States. This study, funded by the African Union, strongly supplements the various initiatives conducted on MCS.
2. The assessment provided in the Technical Report is based on a desktop research of primary and secondary documents such as international fisheries instruments, regional organisation policies and reports, and East African State fisheries laws and regulations. A survey on MCS implementation was circulated to national fisheries institutions and regional fisheries bodies; responses received from the member states have been integrated in the document.. The analysis of individual capacity for MCS and the Recommendations highlighted in this Technical Report are therefore primarily based on readily available information from literature and the responses received from member states.
3. An effective MCS is considered the best hope of preventing, deterring and eliminating illegal, unreported and unregulated (IUU) fishing and is recognized as one of the key principles of fisheries management both in areas under national jurisdiction and the high seas. The three components of MCS suggest that it is not limited to policing or fisheries enforcement but involves a range of measures that takes into account a legal framework, data collection and analysis, and surveillance and patrol systems that would help ensure compliance in fisheries. MCS also comprises land, sea, and air aspects that enable an operational implementation of the system.
4. The rich diversity of East African marine resources and environment calls for an effective conservation and management regime implemented by a robust MCS system. Fishing is one of the main large-scale commercial activities in the region which contributes to achieving food security, poverty alleviation, and economic development. Increased pressure on resources, driven by a number of factors such as population increase, industrialization, overcapacity, IUU fishing, and weak enforcement has become a significant threat to the ecological sustainability of the region's marine and coastal areas. IUU fishing is known to have negative economic, environmental, ecological and social impacts and need to be addressed at both national and regional levels. Recent studies also suggest that there may be incidents involving organized criminal groups in illegal fishing activities, which further call for wider cooperation beyond the scope of national fisheries institutions and regional fisheries management organizations (RFMOs).
5. The implementation of MCS to combat IUU fishing has its legal basis in international binding and non-binding instruments such as the United Nations Convention on the Law of the Sea, UN

Fish Stocks Agreement, FAO Compliance Agreement, the FAO Code of Conduct for Responsible Fisheries and the four International Plans of Action, including the International Plan of Action to Prevent, Deter, and Eliminate Illegal, Unreported and Unregulated Fishing (IPOA-IUU), and the FAO Port State Measures Agreement. These instruments provide for the adoption of a number of MCS measures from the commencement of the fishing activity to the final destination of caught fish. These measures include vessel registration, licensing or authorization to fish, record of fishing vessels, vessel monitoring system, observer programs, boarding and inspection regimes, port State measures, and catch certification.

6. The regional framework for MCS in East Africa comprises legal and policy measures developed under the African Union, other regional fisheries bodies (RFBs) and arrangements, as well as regional economic communities (RECs). These regional fisheries organizations and arrangements include the Southwest Indian Ocean Fisheries Commission (SWIOFC), Indian Ocean Tuna Commission (IOTC), and the South Indian Ocean Fisheries Agreement (SIOFA). Regional economic communities include the Southern African Development Community (SADC) and East African Community. There are other regional institutions and initiatives that have actively conducted MCS activities such as the FISH-i Africa and the Indian Ocean Commission's SmartFish Programme. These organizations and arrangements have different East African membership and participation.
7. The East African States of Comoros, Kenya, Madagascar, Mauritius, Mozambique, Seychelles, South Africa, and Tanzania have enacted fisheries legislation with MCS-related provisions; however not all of them fully implement international and regional obligations and commitments. South Africa has the most comprehensive legal framework for fisheries, which even includes measures to address fisheries crime, and is supported by a full MCS operational unit. Madagascar, Mozambique, Mauritius and Seychelles have relatively updated legislation on fisheries but only with some specific regulations on MCS. Kenya and Tanzania have a more basic MCS framework in place and very little regulations and evidence of implementation, although one of the strengths of their legislation is the adoption of participatory approach to management which may be developed to encourage self-compliance amongst fisheries in the absence of other MCS tools. Comoros has the weakest legal framework and level of MCS implementation. These East African States cooperate with each other, bilaterally and multilaterally, in implementing MCS measures through the various regional programs.
8. The lack of an effective legal framework is recognized as an impediment to an effective and fully functional MCS. A number of institutional and practical challenges are confronted by East African States in establishing a robust legal framework, such as the long process of updating laws and developing comprehensive regulations, the need for a thorough understanding of the legal aspects of MCS tools, lack of use of MCS information in judicial proceedings, lack of strong collaboration between institutions with fisheries-related functions, and inadequate financial and human capacity. From these challenges arise a number of opportunities for cooperation amongst East African States, particularly in terms of utilizing existing regional initiatives and assistance provided by international organisations such as the Food and Agriculture Organization (FAO), sharing of fisheries enforcement data, and conducting joint patrols. East African States which have more updated legal framework and sound MCS strategies may also serve as model framework for neighbouring countries requiring revision of fisheries laws.

9. The African Union has taken steps to promote the sustainable use of fisheries resources in the region in order to achieve food security and economic development. The first conference of African ministers of fisheries and aquaculture (CAMFA I) in 2010 expressed concern at the magnitude of IUU fishing in Africa and its adverse consequences for both the economies of Member States and the fish stocks and thus recommended that Member States, RECs and RFBs strengthen MCS and foster regional cooperation to curb IUU fishing. This concern was also reiterated by CAMFA II at the Joint Conference of African Ministers for Agriculture, Rural Development, Fisheries and Aquaculture in 2014, who equally expressed concern about all forms of overexploitation of the fisheries resources, including illegal fishing, leading to plundering of the resources. The Member States reaffirmed their commitment to strengthen the MCS capacity including implementation of port states measures, flag State measures and related instruments in order to combat IUU fishing.
10. The Policy Framework and Reform Strategy for Fisheries and Aquaculture in Africa, the blueprint for the region's fisheries development, recognizes that IUU fishing results from the open access character of capture fisheries, inadequate or weak national governance for the management of transboundary resources and ecosystems, institutional weaknesses, and insufficient financial investments opportunities. This has caused an estimated annual loss of over US\$1.5 billion in resource rent for African countries. As such, the Policy Framework and Reform Strategy present opportunities for its Member States to optimize benefits from their natural resources by implementing the strategic reforms enunciated in the document.
11. This Technical Report highlights a number of Recommendations based on the analysis of global and regional MCS requirements and an assessment of domestic law and State practice. **Part 1** of the Technical Report, which looks into the concept of MCS and the importance of the system in addressing IUU fishing, recommends the sub-region to:
- Ascertain the priority IUU fishing issues in East Africa, including possible incidents of fisheries crime;
 - Identify specific fisheries and coastal and marine areas in the sub-region which are susceptible to IUU fishing;
 - Identify available MCS tools and assets in each East African State that may be used to address priority IUU fishing issues; and
 - Nominate or establish a repository of relevant studies, documents and other materials relating to the sub-region's fisheries in general, IUU fishing, and MCS which will be accessible to East African States.
12. **Part 2** of the Technical Report on the international legal framework (and other relevant instruments) on MCS provides the following Recommendations:
- Encourage East African States to accede to relevant international fisheries agreements, particularly the 2009 FAO Port State Measures Agreement;
 - Encourage implementation of the FAO Voluntary Guidelines for Flag State Performance;
 - Develop and/or review national plans of action to prevent, deter and eliminate IUU fishing in order to ensure that they address identified priority issues;
 - Review legislation and develop specific regulations to implement MCS tools such as fishing vessel registration and licensing, record of fishing vessels, vessel monitoring system, observer program, boarding and inspection, port State measures, and catch certification; and

- Encourage East African States to participate in the International MCS Network and INTERPOL initiatives to address fisheries crime

13. Part 3 of the Technical Report on regional fisheries framework for East Africa highlights Recommendations that will help strengthen sub-regional cooperation on MCS, as follows:

- Encourage the implementation of relevant provisions of 2014 Policy Framework and Reform Strategy for Fisheries and Aquaculture in Africa;
- Determine sub-regional priorities in MCS implementation that transcends different memberships and participation in various regional organizations and arrangements;
- Develop specific sub-regional strategic actions on fisheries consistent with the Policy Framework and Reform Strategy for Fisheries and Aquaculture in Africa;
- Establish formal arrangements and protocols between regional fisheries bodies and arrangements with policy and management functions (i.e. SIOFA, SWIOFC, and IOTC) that would facilitate exchange of information on IUU fishing and data obtained from MCS tools;
- Develop joint initiatives between RFBs and arrangements and RECs (i.e. SADC, EAC) involving East African States by exchanging information that will achieve common fisheries objectives;
- Adopt policy measures within the purview of RECs to encourage cooperation against fisheries crime;
- Adopt lessons learnt from successful fisheries programs such as FISH-i Africa and IOC's SmartFish at the sub-regional level;
- Engage in MCS activities with other States of the region;
- Conduct regional training on both the legal and practical aspects of Vessel Monitoring System and Observer Program to facilitate cooperation among legal and technical personnel;
- Ensure that any formal arrangement that will be developed within the East African sub-region have provisions that will enable wider cooperation with other sub-regions;
- Investigate how the planned SADC Regional Fisheries MCS Coordinate Centre can facilitate MCS cooperation in the East Africa, which include non-members to the regional economic organisation;
- Develop functional bilateral cooperation in fisheries in shared areas and maritime zones pending maritime boundary delimitation agreements; and
- Incorporate provisions of fisheries partnership agreement and other bilateral cooperation arrangements in domestic legislation.

14. Part 4 of the Technical Report on the assessment of national legislation and State practice recommends the following:

- Review and update domestic fisheries legislation to ensure compliance with global and regional obligations;
- Develop harmonized national MCS strategies and plans with long-, medium- and short-term objectives consistent with relevant legislation and policies and regional objectives, particularly the Policy Framework and Reform Strategy for Fisheries and Aquaculture in Africa;
- Include a risk assessment framework within national MCS strategies and plans;
- Adopt sound regulations on vessel registration and licensing, VMS, observer program, boarding and inspection, port State measures, catch certification and other MCS measures;
- Implement an effective penalty system for fisheries offences which will deprive those that benefit from IUU fishing;

- Incorporate provisions in legislation allowing cooperation with neighbouring States on MCS matters;
- Ensure that an MCS system are supported by a compliance and enforcement mechanism;
- Use participatory management, including co-management and community based management, as an approach to fisheries compliance, particularly in terms of data submission and incident reporting;
- Establish formal collaborative arrangements between institutions with fisheries-related functions which will facilitate sharing of relevant information; and
- Conduct legal and technical training to improve human capacity in MCS implementation.

15. From the comparison of State practice with global and regional requirements, the Technical Report also provides a set of Recommendations in **Part 5** that may help East African States take the first steps in developing a sub-regional cooperation strategy on MCS following previous and current initiatives. Littoral States may establish sub-regional cooperation that will assist each other in implementing existing commitments under regional arrangements and policies, in particular the Policy Framework and Reform Strategy for Fisheries and Aquaculture in Africa, and could initially focus on the following key elements:

- Development of a model legislation to promote harmonization of laws and regulations;
- Sharing of information, taking into account confidentiality and security of data;
- Financial support for regional or sub-regional MCS; and
- Training and professional development of MCS legal and technical staff.

Obtaining commitment from national governments to develop a sub-regional approach should consider that East African States are in various stages of MCS development and have different capacities for implementation.

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1 Introduction

A key pillar of the African Union Policy Framework and Reform Strategy is the promotion of the Conservation and Sustainable Use of fisheries resources to ensure fishing activities are conducted within enforceable regulatory frameworks that are clearly understood, enforceable and supported by resource users and others. Besides supporting the strengthening of national MCS systems, one of the anticipated outcomes from policy reforms proposed under this pillar is effective and sustainable regional (MCS) systems are operating in all regions. The AU Guidelines for implementation of Policy framework and Reform Strategy incorporate criteria and indicators to facilitate domestication of relevant provisions in national and regional policies. These provisions of the pan African fisheries policy document incorporate important principles of relevant global fisheries management instruments.

The Food and Agriculture Organization (FAO), in its Technical Guideline on the Implementation of the International Plan of Action to Prevent, Deter and Eliminate Illegal, Unreported and Unregulated Fishing (IPOA-IUU) states that effective implementation of monitoring, control, and surveillance (MCS) is the “best hope for preventing, deterring, and eliminating IUU fishing.” The implementation of MCS activities such as boarding, inspection, arrest and judicial proceedings is one of the coastal State powers under the United Nations Convention on the Law of the Sea (LOSC) to ensure the conservation and management of fisheries resources in the Exclusive Economic Zone (EEZ). Similarly, MCS is also one of the general principles in the conservation and management of straddling and highly migratory fish stocks in areas of the high seas, managed within the competence of regional and sub-regional fisheries organizations.

The IPOA-IUU adopts the broad concept of MCS, together with all its components and tools, and provides the requirement for States to apply specific MCS-related measures from the commencement of the fishing activity to the final destination of caught fish. ¹These measures include vessel registration, authorization to fish, record of fishing vessels, vessel monitoring system (VMS), observer program, boarding and inspection, port State measures, catch certification and other measures such as the acquisition, storage and dissemination of MCS data, training and education to all persons involved in MCS operations, and promoting MCS issues in national judicial systems. This wide range of measures suggests that all States, whether acting as a flag, coastal, port, or market State must adopt an effective MCS system in order to address IUU fishing.

This Technical Report aims to conduct a review of the current status of MCS in the East African region of the African Union (AU) in order to provide a baseline document of relevant information and knowledge that will enable the implementation of an effective system in the region. The specific objectives addressed in this Technical Report are to:

- a. Assess the capacity for MCS in AU member States and their effectiveness, strength and weakness, with a focus on East Africa;
- b. Identify difficulties and challenges related to capacity building for monitoring fisheries in East Africa;
- c. Make a thorough examination of fisheries Observers Programs in East African countries,
- d. Assess the status of vessels registers and analyze the obstacles to the establishment and/or non-

¹ Food and Agriculture Organization, *International Plan of Action to Prevent, Deter, and Eliminate Illegal, Unreported and Unregulated Fishing (IPOA-IUU)* (FAO, 2001), para. 24.

operationalization of vessel registers (domestic and regional) as essential elements for effective MCS;

- e. Examine the legal framework for MCS and identify the causes of weakness and/or lack of enforcement of laws and regulations in force in East African countries for an effective deterrent against infractions in the industrial and artisanal fisheries;
- f. Review regional arrangements, if any, for MCS cooperation, their effectiveness, strengths and weaknesses;
- g. Assess/identify challenges and constraints for regional cooperation in the fight against IUU fishing;
- h. Propose a framework for establishment of regional accord for MCS, e.g. MCS Centre
- i. Analyze the results obtained in the context of other national or regional past or current projects in the fighting against IUU fishing for best practices, success stories and lessons learnt; and
- j. Make proposals for effective and sustainable monitoring capacity of fisheries in East African States.

The Technical Report is divided into five Parts. Part 1 provides the concept, components and tools of MCS. It also contains a summary of existing studies on MCS in East Africa, as well as the project approach and methodology. Part 2 identifies the international legal requirements on MCS from relevant binding and non-binding instruments such as the LOSC, UN Fish Stocks Agreement, FAO Compliance Agreement, FAO Code of Conduct, IPOA-IUU, and FAO Port State Measures Agreement. Part 3 analyses the current regional capacity in implementing an MCS framework in East Africa. Part 4 of the Technical Report examines state practice in adopting specific MCS measures such as vessel registration and licensing, observer program, vessel monitoring system, port State measures and catch certification, and presents an analysis of the Strengths, Weaknesses, Opportunities, and Threats (SWOT) for the East African sub-region. Part 5 concludes with a summary of recommendation towards a sub-regional MCS cooperation to address IUU fishing.

1.1 Concept of MCS

An MCS Conference of Experts organised by FAO in 1981 developed a definition of MCS that is commonly accepted by fisheries personnel. In this conference, MCS was defined as:

Monitoring - the continuous requirement for the measurement of fishing effort characteristics and resource yields;

Control - the regulatory conditions under which the exploitation of the resource may be conducted; and

Surveillance - the degree and types of observations required to maintain compliance with the regulatory controls imposed on fishing activities

There are other definitions or descriptions of MCS as provided by other international organisations. The following table presents the various definitions of MCS.

What these definitions suggest is the comprehensive nature of MCS systems that take into account the legal framework for fisheries, data collection and analysis, and surveillance and patrol systems. Hence, MCS is not merely limited to policing or fisheries enforcement and involves a whole range of measures that would ensure fisheries compliance.

Table 1: Definitions and Descriptions of MCS

Source	Monitoring	Control	Surveillance
FAO Expert Consultation, 1981*	the continuous requirement for the measurement of fishing effort characteristics and resource yields.	the regulatory conditions under which the exploitation of the resource may be conducted.	the degree and types of observations required to maintain compliance with the regulatory controls imposed on fishing activities.
Southern African Development Community (SADC) Protocol*	the follow-up of a fishery through collection, compilation, analysis, and reporting of information on fishing and related activities, including fish processing, fish trade and aquaculture.	the establishment and enforcement of the legal and administrative measures under which living aquatic resources and aquatic ecosystems can be exploited.	the checking and supervision of fishing activity to ensure compliance with control measures.
Fishery Committee for the Eastern Central Atlantic (CECAF), 1981*	the collection, measurement, and analysis of fishing activity on catch, species composition, effort, discards, and area of operation, inter alia, which is necessary for fisheries managers to arrive at management decisions.	the specifications of the terms and conditions under which resources can be harvested, and normally contained in national legislation, and provides a basis for which management arrangements are enforced.	the checking and supervision of fishing activity to ensure national legislation and terms and of access and management measures are observed. This activity is critical to ensure that resources are not overexploited, poaching is minimised and management arrangements are implemented.
FAO-FAD, 2007**	the collection, measurement and analysis of fishing activity including, but not limited to: catch, species composition, fishing effort, bycatch, discards, area of operations, etc. This information is primary data that fisheries managers use to arrive at management decisions.	the specification of the terms and conditions under which resources can be harvested. These specifications are normally contained in national fisheries legislation and other arrangements that might be nationally, sub-regionally, or regionally agreed. The legislation provides the basis for which fisheries management arrangements, via MCS, are implemented.	the regulation and supervision of fishing activity to ensure that national legislation and terms, conditions of access, and management measures are observed. This activity is critical to ensure that resources are not over exploited, poaching is minimized and management arrangements are implemented.

Sources: * K. Kelleher, *The Costs of Monitoring, Control and Surveillance of Fisheries in Developing Countries*, FAO Fisheries Circular No. 976, FAO, Rome, 2002; ** <http://www.fao.org/fi>.

1.2 MCS Components and Tools

MCS has three spatial components: land, sea, and air. The land component of an MCS system serves as the base of operations and the co-ordinating centre for all MCS activities from which governments can regulate the deployment of resources to best address changing situations. It is the sector responsible for port inspections and the monitoring of transshipments and trade in fish products to ensure compliance with fisheries legislation. The sea component includes MCS activities undertaken in marine areas under the jurisdiction of a State and may also cover high seas areas. The technology involved in the sea component of MCS includes radar, sonar, and vessel platforms. The air component of MCS is usually the first level of response to a coastal State or region of concern and covers the air and space equipment such as aircrafts and satellites used in MCS activities. The flexibility, speed and deterrence of air surveillance make it a very useful and cost-effective tool for fisheries management. Different States and regions would have different application and combination of the land, sea, and air components of their MCS systems, based on cost, commitment, organisational structure, and fisheries management issues and priorities.

According to FAO, the key tools for MCS at the national level include: an appropriate participatory management plan developed with stakeholder input, enforceable legislation and control mechanisms such as licensing, data collection systems such as dockside monitoring, observers, sea and port inspections, supporting communication systems, and linked land-based monitoring. ²A national MCS system would also need patrol vessels capable of extended operations to remain at sea with the fishing fleets, aircraft available for rapid deployment to efficiently search large areas, and use, where appropriate, of new technology such as vessel monitoring system, satellite, video, and infra-red tracking. ³In the implementation of an effective MCS system, the support of the industry and fishers and professional staff would also be necessary.

1.3 Importance of Addressing IUU Fishing in East Africa

The marine eco-region of East Africa covers more than 480,000 square kilometres and extends 4,600 kilometres along the continent's eastern coast. ⁴Including the coast of South Africa, this totals more than 7,200 kilometres. In the Eastern African sub-region, almost 90 per cent of the fish produced come from freshwater sources while the remaining 10 per cent comprises marine capture from the vast marine areas of the Indian Ocean. ⁵In addition to the tuna resources, the coast of East Africa is home to rich biodiversity, including 3,000 species of molluscs, 1,500 species of fish, 1,000 species of seaweed, 300 species of crabs, 200 coral species, 100 species of cucumbers, 50 species of starfish, and 35 species of marine mammals. ⁶Fishing is the main large-scale commercial activity in the region which accounts for a large portion of foreign exchange earnings.

Increased pressure on resources is a significant threat to the ecological sustainability of East African marine and coastal areas. A number of factors have contributed to this pressure such as population increase, industrialization of the fishing sector, overfishing, climate change and other environmental factors, open access fisheries, overcapacity in the fishing fleet, subsidies, ineffective data collection systems, unsustainable fishing practices, lack of effective fisheries management, compliance and enforcement, and weak MCS.

²Peter Flewwelling, Cormac Cullinan, David Balton, Raymond P. Sautter and J. Eric Reynolds, *Guide to Monitoring, Control, and Surveillance Systems for Coastal and Offshore Capture Fisheries*, FAO Fisheries Technical Paper. No. 415 (Rome: Italy, 2003).

³Ibid

⁴WWF International Corals Initiative, *East African Marine Region* (WWF, 2003)

⁵ACP Fish II, *Eastern Africa: Fisheries in the Region*, www.acpfish2-eu.org.

⁶WWF, *Coastal East Africa Initiative*. www.panda.org.

It is estimated that IUU fishing accounts for almost one third of total catches in some important fisheries and may represent an overall cost to developing countries of between USD2 to USD15 billion a year.⁷ In the EEZ of African States, IUU fishing results in an annual loss estimated between USD 2 to USD 5 billion of potential wealth. About 25 to 30 per cent of the global fish catch is considered unreported. The degree of under-reporting of fish catch can be up to 75 per cent in regional areas, while on the high seas it may be 100 per cent.⁸ As an example at the national level, it has been reported that under-reporting of fish catch can be as high as 50 per cent in Kenya and even 75 per cent within the shrimp fishery in Mozambique.⁹ In 2004 alone, the estimated unreported catch of toothfish derived from landings in South Africa and Mauritius ports was estimated to be 74,000 to 82,200 tonnes.¹⁰ Studies estimate that the total loss to IUU fishing in some African countries including Mozambique, Kenya, and the Seychelles amount to USD372 million or 19 per cent of the total value of the catch.¹¹

IUU fishing is known to have inter-related negative economic, environmental, ecological, and social impacts. Regarding economic impacts, IUU fishing reduces the contribution of EEZ or high seas fisheries to the national economy in terms of employment from local and locally based foreign fleets and leads to loss of potential resource rent. This is likely to be a major factor in respect of IUU fishing in the EEZ by reducing local landings and non-payment of access dues which will in turn impact on actual and potential export earnings. This also has implications for surveillance services which are supported wholly or partly by export revenues,¹² as well as put budget pressures on MCS and fisheries management.¹³

The destruction of ecosystems is one of the main ecological impacts of IUU fishing, resulting in loss of ecosystem service value from coastal areas, e.g. inshore prawn fishing areas and damage to mangrove areas. This will lead to a reduction in income for coastal fishing communities. The decline in fish availability on local markets may also reduce protein availability and national food security. This may increase the risk of malnutrition in some communities, which are some of the key social impacts resulting from IUU fishing. This is particularly important as many coastal communities in Eastern Africa are heavily dependent on fish as a source of animal protein.

IUU fishing also results in conflicts between artisanal and commercial fishers. Drammeh (2000)¹⁴ reports that in Madagascar industrial fishing vessels (legal and illegal) often encroach on small scale fishing grounds with both licensed and unlicensed fishing vessels using prohibited fishing gears, equipment, and methods. This conflict also occurs in the shrimp fishery in Mozambique. Furthermore there are reported incidences of armed resistance to surveillance and enforcement operations in Somali waters.¹⁵ This practice has been known to extend to Mozambique, leading to armed conflicts and greatly increasing the difficulty of pursuing an effective MCS system in the country. IUU fishing

⁷Environmental Justice Foundation (EJF), *Pirates and Profiteers: How Pirate fishing Fleets are Robbing People and Oceans*, London, UK, 2005, www.ejfoundation.org

⁸David Evans, 'The Consequences of Illegal, Unreported and Unregulated Fishing for Fishery Data and Management', *Expert Consultation on Illegal, Unreported and Unregulated Fishing Organised by the Government of Australia in Cooperation with FAO*, Sydney, Australia, 15-19 May 2000, AUS:IUU/2000/12, 2000, para. 3.

⁹MRAG, *Review of Impacts of Illegal, Unreported and Unregulated Fishing on Developing Countries: Final Report*, (UK, 2005), p. 55.

¹⁰D.J. Agnew, "The Illegal and Unregulated Fishery for Toothfish in the Southern Ocean, and the CCAMLR Catch Documentation Scheme," *Marine Policy* 24 (2000), p. 362.

¹¹ MRAG, *Review of Impacts of IUU Fishing on Developing Countries*, p. 44.

¹² MRAG, *Review of Impacts of IUU Fishing on Developing Countries*, p. 55.

¹³See W.E. Schrank, R. Annason and R. Hanneson, *The Cost of Fisheries Management* (Ashgate, 2003).

¹⁴O.K.L. Drammeh, *Illegal, Unreported and Unregulated Fishing in Small Scale Marine and Inland Capture Fisheries*. Government of Australia and FAO, (Sydney, 2000).

¹⁵*Pirates and Profiteers. A report by the Environmental Justice Foundation, 2005.*

further undermines the rule of law in East African States due to poor governance structures and law enforcement, and can also have an effect on gender issues in regards to onshore fishing by women who in many societies have an important role in fish processing and marketing. IUU fishing may also lead to lower employment if it has a negative impact on stocks which may lead to a reduction in household incomes and therefore exacerbate poverty.¹⁶

IUU fishing has negative environmental impact on both target and associated species. Underreporting of catch, especially by distant water fishing nations in the EEZ can severely compromise scientific stock assessments. ¹⁷Exploitation of fisheries also has an effect on associated fish populations as the removal of target species (or bycatch species) causes a change in trophic functioning of an ecosystem. Additionally, destructive fishing practices which may be used by IUU vessels destroy habitats and may have far-reaching impacts on many sensitive habitats such as inshore shallow seas, coral and seagrass beds, which act as nursery and settlement areas for other marine animals including juvenile fish. IUU fishers may also use their activities as a chance to dump waste, especially toxic waste in the sea.¹⁸

For many developing States, a major challenge in addressing IUU fishing is the limited capacity to manage vast expanse of waters. In Africa, the lack of enforcement capabilities also hinders the monitoring of fishing operations. ¹⁹Additionally, the situation in the region is aggravated by ineffective observer programs for monitoring fishing activities of licensed vessels, poor logistics for offshore fisheries surveillance, weak systems for vessel registration and licensing, and lack of regional collaboration for the MCS systems. These gaps have considerably weakened the capacity of the African Continent to fully realize the socio-economic benefits associated with rational exploitation of its marine fisheries resources.

In 2010, the United Nations Office of Drugs and Crime (UNODC) has conducted a study on the existence of transnational crime in the fishing industry and highlighted some of the key links between organized crime and fisheries as follows:

- Fishers suffer severe abuse when they are trafficked for the purpose of forced labour on board fishing vessels;
- There is frequent child trafficking in the fishing industry;
- Transnational organised criminal groups are engaged in marine living resource crimes in relation to high value, low volume species bound for overseas restaurants and the aquarium industry, such as abalone, rock lobster, and some reef fishes, such as Napoleon wrasse;
- Laundering of illegally caught fish on to the market is often conducted through the use of at-sea transshipments and fraudulent catch documentation;
- Fishing licensing and control system is vulnerable to corruption;
- Fishing vessels are used for the purpose of smuggling of migrants, illicit traffic in drugs (primarily cocaine), illicit traffic in weapons, and acts of terrorism; and
- Transnational fishing operators involved in marine living resource crime are engaged in complex incorporation and vessel registration strategies and high degree of logistical coordination of vessel support services at sea.²⁰

¹⁶MRAG, *Review of Impacts of IUU Fishing on Developing Countries*, p. 59

¹⁷*Ibid.*, p.61

¹⁸*Ibid.*

¹⁹WWF International Endangered Seas Campaign, *The Footprint of Distant Water Fleets on World Fisheries*. (Surrey: WWF, 1998), p. 23.

²⁰ See UN Office of Drugs and Crime, *Transnational Organized Crime in the Fishing Industry: Focus on Trafficking in Persons, Smuggling of Migrants, Illicit Drug Trafficking* (Vienna: UNODC, 2010), pp 1-3.

The UNODC report also provides that fishers are often recruited by organized criminal groups due to their skills and knowledge of the sea and are seldom regarded as the masterminds behind organised criminal activities.²¹A number of factors have also been highlighted on what makes the fishing industry susceptible to transnational organised crime. These factors include the global reach of fishing vessels, ineffective monitoring of fishing vessels, lack of transparency on the identity of beneficial owners of vessels, continuous decline of global stocks, poor socio-economic conditions of fishers and fishing communities, lack of effective flag and port State jurisdiction, corruption, and lack of international regulation on the safety of fishing vessels and working conditions of fishers.²²A number of countries in Africa have been included in the report as having reported incidents of fisheries crime.

It is therefore necessary to protect the rich fisheries resources of the East African region not only by addressing fisheries management issues and IUU fishing, but also by combating illegal fishing activities conducted by transnational criminal groups. This will ensure environmental sustainability and achievement of food security and socio-economic development. MCS as a key principle and tool of fisheries management and a means to address IUU fishing can help East Africa protect and conserve its resources in a significant way for future generations.

1.4 Existing Studies, Workshop Reports, and Other Documents on MCS in East Africa

A number of studies and projects have been conducted by national and regional institutions within East Africa to address issues related to MCS and combating IUU fishing. Most of the projects have been funded by the European Union, Norway (Nordenfjeldske Development Services) and international organisations such as the FAO and the World Bank, in cooperation with national governments and regional organisations. Examples of these studies are as follows:

ACP Fish II Programme

This multi-year programme was financed by the European Development Fund with five priority areas: effective management for sustainable fisheries, promoting optimal returns from fisheries trade, supporting food security in ACP countries, developing aquaculture and maintaining the environment. One of the outputs of this programme is a study of Eastern and Southern African fisheries.

Per Erik Bergh, Comprehensive Review of MCS Capacity in the ESA-IO Region, Indian Ocean Commission, SmartFish, SF/2012/14

This study, funded by the European Union and conducted under the SmartFish programme, analyzed and benchmarked the MCS capacity of seven countries (Comoros, Kenya, Madagascar, Mauritius, the Seychelles, Somalia and the United Republic of Tanzania) and identified gaps in their systems. The benchmarking for MCS capacity included information on IUU controls and measures in place, institutional capacity including MCS tools and resources, MCS operations and activities undertaken, human capacity, and main IUU concerns by fishery. Actions were recommended to address institutional and human capacity gaps. This is the most recent and up-to-date report that focuses on an assessment of staff availability, training, office space, availability of computers and internet, as well as the ability to make decisions and interact with other agencies.

²¹*Ibid.*

²²*Ibid.*, p. 3.

Warwick H.H. Sauer, MCS Senior Management Workshop 2, 28-30 August 2012, Tanzania, SmartFish Meeting Report (Indian Ocean Commission, 2012)

This meeting identified priority MCS issues in the Eastern and Southern African and Indian Ocean (ESA-IO) region such as the lack of specific MCS strategic plans, resource limitations, lack of judicial training in dealing with fisheries offences, and other fisheries management issues such as the open access nature of fisheries and lack of effective national data strategy. The workshop recognized that by improving governance and management of fisheries and aquaculture development, other objectives can be achieved such as improving food security, social benefits, regional trade and increase of economic growth while protecting fisheries resources and ecosystems.

Republic of Mozambique, Ministry of Fisheries, Concept Paper MCS Regional Network for East and Southern Africa (Mozambique, 2007)

Mozambique has taken an active role in the Southwest Indian Ocean Fisheries Commission (SWIOFC) since its inception, especially in terms of implementing mechanisms for responsible fisheries management and the MCS scheme to combat IUU fishing. The country prepared a concept paper for consideration by SWIOFC members with respect to the establishment of a regional MCS Network at the operational level amongst members and interested and accepted parties and advisors. The proposed regional network aims to share information and ideas to promote cooperation and possible shared use of scarce MCS assets to combat IUU fishing. It also envisions an informal network of designated MCS operations personnel from Indian Ocean countries that would complement the International MCS Network and focus more on regional and bilateral MCS operations issues.

FAO, Report of the FAO Regional Workshop on the Elaboration of National Plans of Action to Prevent, Deter and Eliminate Illegal, Unreported and Unregulated Fishing: Southern and East Africa Subregion, Kariba, Zimbabwe, 24-28 November 2003, FAO Fisheries Report No. 730 (FAO, 2003)

This report highlights one of the key efforts of the FAO to conduct regional meetings to increase awareness amongst States on the implementation of the IPOA-IUU when it was newly adopted in 2001. This workshop also served as training for high level fisheries officials on the development of national plans of action to combat IUU fishing. A number of follow-up actions by countries were proposed during the workshop such as the development of a technical guideline for the implementation of the IPOA-IUU for inland fisheries. The Workshop also proposed the enhancement or establishment of systems of national vessel registration and maintenance of national records of registered vessels for all semi-industrial and industrial fishing vessels operating in marine and inland fisheries in the region. This registration process should be seen as a minimum requirement and countries are encouraged to register all fishing vessels.

Other Studies and Reports

Other workshop reports have also been published such as the Report of the FAO Regional Workshop on Port State Measures to Combat Illegal, Unreported and Unregulated Fishing, Cape Town, South Africa, 28-31 January 2008, FAO Fisheries Report No. 859 (FAO, 2008). The IOC has organised a number of MCS-related trainings and workshops while the NFDS has conducted a number of relevant projects such as the Technical assistance for implementation of a regional fisheries strategy for ESA-IO, Fisheries legislation update for Comoros, Data harmonization options for fisheries MCS in the Indian Ocean, Sustainability plan for SADC MCS Regional Centre, and Preparation of training courses on patrol vessels, MCS and port State measures. These activities have led to the development of policies such as the Policy Framework and Reform Strategy for Fisheries and Aquaculture in

Africa. Various publications and studies are also available under The New Partnership for Africa's Development (NEPAD) which implements the Partnership for African Fisheries (PAF).

In summary, these studies have focused on technical and institutional capacity assessment, as well as examination of domestic, sub-regional and regional IUU fishing issues. This Technical Report addresses a key gap in previous studies, which include an analysis of legal requirements to implement an effective MCS in East African States. This AU study therefore strongly supplements previous projects on the topic.

1.5 Project Approach and Methodology

In order to successfully achieve the objectives of the project, the approach taken involves four activities: desktop research, legal analysis, consultation through a survey questionnaire, and SWOT analysis. The desktop research has three aspects: 1) an identification of the international legal requirement on MCS from relevant binding and non-binding international agreements such as the LOSC, UN Fish Stocks Agreement, FAO Compliance Agreement, FAO Code of Conduct, IPOA-IUU, and FAO Port State Measures Agreement; 2) Analysis of regional capacity in implementing an MCS framework in East Africa; and 3) Assessment of state practice in Africa in the adoption of specific MCS measures such as vessel registration and licensing, observer program, vessel monitoring system, boarding and inspection, port State measures, and catch certification. The assessment will compare the international requirements vis-a-vis adoption of MCS measures by African States and identify difficulties and challenges for the region. A short scoping survey was developed and distributed to East African fisheries organisation to obtain information on the implementation of MCS in individual countries and the region and ascertain the challenges confronted by East African States. The survey responses received have been integrated in the Technical Report, particularly in Part 4 on the national framework. Annex 1 presents the two part survey prepared for this project. The analysis in this Technical Report largely relies on primary documents such as international binding and non-binding instruments, regional and bilateral agreements and policies, official reports from relevant organisations, domestic laws and regulations, and studies conducted by various institutions.

The Final Technical Report provides a summary of relevant international fisheries-related instruments, legal requirements for implementing MCS tools, examination of relevant policies, legal measures and MCS activities by regional bodies and arrangements, and overview of country legal framework on fisheries MCS. The overarching framework for fisheries supported by the African Union is also highlighted. The domestic framework is examined against the international and regional requirements and a brief SWOT analysis is provided for each country. Each major part of this Technical Report provides a summary of Recommendations based on analysis of available information, commencing on Part 1 Recommendations immediately below. Recommendations on a regional or sub-regional approach towards MCS cooperation is also presented in the last section of this Technical Report.

Part 1 Recommendations

Ascertain the priority IUU fishing issues in the East African sub-region, including possible incidents of fisheries crime

Identify specific fisheries and coastal and marine areas which are susceptible to IUU fishing in East Africa

Identify available MCS tools and assets in each East African state that may be used to address priority IUU fishing issues

Nominate or establish a repository of relevant studies, documents and other materials relating to fisheries in general, IUU fishing and MCS which will be readily available to East African States

2 *International Legal Framework on MCS*

2.1 **Global Fisheries Instruments with MCS-related Provisions**

The implementation of MCS systems has its legal basis in international instruments such as the LOSC, FAO Code of Conduct for Responsible Fisheries, FAO Compliance Agreement, the UN Fish Stocks Agreement and the FAO Port State Measures Agreement. Similarly, the IPOA-IUU provides the requirement for States to apply specific MCS-related measures from the commencement of the fishing activity to the final destination of caught fish. These measures include vessel registration, issuance of fishing licenses, record of fishing vessels, capacity-building, and implementation of vessel monitoring system, observer programmes, boarding and inspection regimes, and data collection and management. Based on these international instruments, the purpose of MCS systems is to ensure that general fisheries policies and conservation and management measures are implemented fully and expeditiously and to prevent, deter and eliminate IUU fishing.

United Nations Convention on the Law of the Sea

The United Nations Law of the Sea Convention (LOSC) provides a comprehensive framework for the management of all living marine resources. Most relevant to the promotion of responsible fishing are the regimes established under the LOSC on the exclusive economic zone (EEZ) and the high seas. The regime of the EEZ recognises the sovereign rights of coastal States in conserving and managing living resources in the area, including adopting laws and regulations that apply to foreign fishing vessels conducting fishing activities in the zone. The LOSC also contains provisions on fishing on the high seas, a significant part of which involves the implementation of flag State duties, as well as the duty to cooperate among States.

FAO Compliance Agreement

The Agreement to Promote Compliance with International Conservation and Management Measures by Fishing Vessels on the High Seas (FAO Compliance Agreement) reiterates the provisions of the LOSC with respect to the need for effective control of fishing vessels on the high seas. This agreement applies to all fishing vessels over 24 metres in length and provides measures that flag States are required to implement to ensure the compliance of vessels conducting high seas fishing with international conservation and management measures. These measures include the issuance of authorisations to fish, maintenance of records of fishing vessels, and cooperation among States for the exchange of information.

UN Fish Stocks Agreement

The Agreement for the Implementation of the Provisions of the United Nations Convention on the Law of the Sea of 10 December 1982 Relating to the Conservation and Management of Straddling Fish Stocks and Highly Migratory Fish Stocks (UNFSA) aims to facilitate the implementation of the provisions of the LOSC with regard to the management and conservation of straddling and highly migratory fish stocks. The UN Fish Stocks Agreement generally applies to high seas fisheries, although some of its provisions are also applicable to the EEZ based on the principle of compatibility of conservation and management measures. In addition to the flag State duties stipulated in the FAO Compliance Agreement, the UN Fish Stocks Agreement enumerates other flag State responsibilities such as the implementation of marking of fishing vessels and gear regulations, vessel monitoring systems, observer programs, boarding and inspection, and port State measures.

FAO Code of Conduct for Responsible Fishing

The FAO Code of Conduct for Responsible Fishing provides principles and standards applicable to the conservation, management and development of all fisheries. It covers capture fisheries, processing and trade of fish and fishery products, fishing operations, aquaculture, fisheries research and the integration of fisheries into coastal area management. The Code is global in scope and although considered a voluntary instrument, it contains provisions that are reflected in binding instruments such as the LOSC, FAO Compliance Agreement, and the UN Fish Stocks Agreement.

IPOA-IUU

The International Plan of Action to Prevent, Deter, and Eliminate Illegal, Unreported and Unregulated Fishing (IPOA-IUU) is the first voluntary international instrument formulated to specifically address IUU fishing. Its objective is “to prevent, deter, and eliminate IUU fishing by providing States with comprehensive, effective, and transparent measures by which to act, including through appropriate regional fisheries management organisations, established in accordance with international law.” The IPOA-IUU is considered a comprehensive “toolbox”, which has a full range of measures that can be used by flag States, port States, coastal States, and “market States” or States which engage in the international trade in fish to deal with various manifestations of IUU fishing within the jurisdiction of States and on the high seas. Measures that cut across the responsibilities of flag, coastal, port, and market States are categorised under “All State Responsibilities” such as the adoption of national plans of action to combat IUU fishing and effective MCS.

IPOA-Capacity

The International Plan of Action for the Management of Fishing Capacity (IPOA-Capacity) is a voluntary instrument that applies to all States whose fishers engage in capture fisheries. It contains urgent actions and identifies mechanisms to promote the implementation of the international plan of action. Some of the urgent actions include the assessment and monitoring of fishing capacity and preparation and implementation of national plans.

IPOA-Seabirds

The International Plan of Action for Reducing Incidental Catch of Seabirds in Longline Fisheries (IPOA-Seabirds) is a voluntary instrument that sets out activities which implementing States are expected to carry out, including an assessment of whether a problem exists with respect to reducing the incidental catch of seabirds in longline fishery. The IPOA-Seabirds also calls on States to adopt national plans of action addressing the problem as well as procedures for national reviews and reporting requirements. It further provides a summary of appropriate mitigation measures which States may consider in the adoption of the national plans of action.

IPOA-Sharks

The International Plan of Action for the Conservation and Management of Sharks (IPOA-Sharks) is a voluntary instrument that applies to all States whose fishers engage in shark fisheries. It provides a set of activities which implementing States are expected to carry out, including an assessment of whether a problem exists with respect to sharks and adoption of national plans of action as well as procedures for national reviews and reporting requirements.

FAO Model Scheme on Port State Measures

A Model Scheme on Port State Measures to Combat IUU Fishing was adopted by the FAO in 2004

which provides guidelines for carrying out inspections of foreign vessels in ports, a list of information that should be provided by vessels in advance to port States, expected results from port inspections, training of port inspectors, and a proposed information system among port States. The Model Scheme conforms to the measures adopted under the IPOA-IUU and all relevant rules of international law and assists States in developing common procedures for inspection and agreed measures against IUU fishing vessels.

FAO Port State Measures Agreement

The Agreement on Port State Measures to Prevent, Deter and Eliminate Illegal, Unreported and Unregulated Fishing was adopted in 2005 and aims to combat IUU fishing through the implementation of effective port State measures, giving emphasis to the role of port States in ensuring the long term conservation and sustainable use of living marine resources and ecosystems. The agreement applies to foreign vessels seeking entry into a coastal State's ports, except for vessels of a neighboring State that are engaged in artisanal fishing for subsistence, provided that the port State and the flag State cooperate to ensure that such vessels do not engage in IUU fishing. It also does not apply to container vessels that are not carrying fish, or if carrying fish, only fish that have been previously landed provided that there are no clear grounds for suspecting that such vessels have engaged in fishing activities in support of IUU fishing and/or verified by catch certification system for origin of catch. The port State measures provided in the agreement include designation of ports where foreign vessels can seek entry, advanced notification of entry, port inspection, and port enforcement actions such as prohibition of landing and transshipment of fish, as well as denial of port entry.

FAO Voluntary Guidelines for Flag State Performance

These Voluntary Guidelines aim to prevent, deter and eliminate IUU fishing or fishing related activities through the effective implementation of flag State responsibilities to ensure the long-term conservation and sustainable use of living marine resources and marine ecosystems. Based on the Guidelines, the flag State should: (a) act in accordance with international law with respect to flag State duties; (b) respect national sovereignty and coastal State rights; (c) prevent, deter and eliminate IUU fishing or fishing related activities in support of such fishing; (d) effectively exercise its jurisdiction and control over vessels flying its flag; (e) take measures to ensure that persons subject to its jurisdiction, including owners and operators of vessels flying its flag, do not support or engage in IUU fishing or fishing related activities in support of such fishing; (f) ensure the conservation and sustainable use of living marine resources; (g) take effective action against non-compliance by vessels flying its flag; (h) discharge its duty to cooperate in accordance with international law; (i) exchange information and coordinate activities among relevant national agencies; (j) exchange information with other States and give mutual legal assistance in investigation and judicial proceedings, as required by their respective international obligations; and (k) recognize the special interests of developing States, in particular the least developed among them and small island developing States, and to cooperate to enhance their abilities as flag States including through capacity development.

The following table summarizes the ratification and accession of East African States to key international fisheries agreements.

Table 2: Table of Signature, Ratification, and/or Accession of East African States to International Fisheries-Related Agreements

East African State	LOSC (entered into force on 16 Nov 1994)	UN Fish Stocks Agreement (entered into force on 11 Dec 2001)	FAO Compliance Agreement (entered into force on 24 April 2003)	FAO Port State Measures Agreement (adopted August 2009)
Comoros	21 June 1994 (R)	-	-	-
Kenya	02 March 1989 (R)	13 July 2004 (A)	-	19 Nov 2010 (S)
Madagascar	22 August 2001 (R)	-	Ratified	-
Mauritius	04 Nov 1994 (R)	25 March 1997 (A)	Ratified	-
Mozambique	13 March 1997 (R)	10 Dec 2008 (A)	Ratified	19 Aug 2014 (R)
Seychelles	16 Sept 1991 (R)	20 March 1998 (R)	Ratified	19 June 2013 (A)
South Africa	23 Dec 1997 (R)	14 Aug 2003 (A)		-
Tanzania	30 Sept 1985 (R)	-	Ratified	-

(S) Signature (R) Ratification (A) Accession (-) neither signed nor ratified

2.2. Summary of Legal Requirements

Based on the binding and non-binding international fisheries-related instruments above, the following are the legal requirements for the adoption of MCS tools.

2.2.1 Vessel Registration

The Law of the Sea Convention provides the right of every State to sail ships flying its flag on the high seas (art 90). This right is balanced with the obligation to fix the conditions for the grant of its nationality to ships, for the registration of ships in its territory, and for the right to fly its flag (art 91). The FAO Code of Conduct provides that a flag State needs to ensure that vessels to which it has allocated its flag carry onboard the original Certificate of Registry or a document that would attest to the nationality of the fishing vessels (art 8.2.2).

The LOSC provides the obligation of a flag State to effectively exercise its jurisdiction and control in administrative, technical, and social matters over ships flying its flag (art 94). Effective control and jurisdiction over fishing vessels are therefore not only limited to the registration of fishing vessels but also to generally accepted international regulations on the construction, equipment, seaworthiness of ships, safety at sea, and labour standards, which are embodied in International Maritime Organization (IMO) and International Labour Organization (ILO) conventions, regulations, and standards. Most of the requirements of IMO conventions however are not fully applicable to fishing vessels because of their unique design and nature of operations.

The uniform standards developed jointly by FAO, ILO, and IMO on the Code of Safety for Fishermen and Fishing Vessels provide some guidelines on promoting the improvement of safety and health on board fishing vessels. The Code provides information on the use of navigational equipment, mechanical equipment, and safety on deck. It also discusses measures on the safety of fishing operations, particularly trawling, purse seining, Danish seining, longline fishing, tuna pole and line fishing, and fish and ice handling, which are not discussed in any other international guidelines or codes. The FAO, ILO, and IMO have also formulated guidelines on the construction and design of smaller fishing vessels from 12 meters to 24 metres, as well as measures to protect and accommodate crew on these vessels.

Effective jurisdiction and control of States in social matters over ships flying their flags further involves the adherence to maritime labour standards, particularly on the minimum age, medical examination, accommodation, articles of agreement, competency certificates, vocational training, and hours of work, under the comprehensive Maritime Labour Convention of 2006 and the ILO Work in Fishing Convention 2007 (No. 188). These conventions provide the overall responsibility of flag States to ensure the rights of fishers in relation to their service on board fishing vessels, as well adopt laws and regulations that will ensure fishing vessel owners are responsible for making available to fishers agreements that will address their living and working conditions.

Another flag State duty is to establish requirements for the marking of fishing vessels in accordance with the FAO Standard Specifications for the Marking and Identification of Fishing Vessels. These standard specifications are based on the International Telecommunication Union Radio Call Signs (IRCS) system which is an established international system from which the identity and nationality of vessels can be readily determined. According to the FAO Standard Specification for the Marking and Identification of Fishing Vessels, apart from the name of the vessel or identification mark and the port of registry required by international practice or national legislation, the marking system shall be the only other vessel identification mark consisting of letters and numbers to be painted on the hull or superstructure. Flag States are also required to mark fishing gears in accordance with uniform and internationally recognisable vessel gear marking systems. The FAO has proposed legal and technical measures for the marking of fishing gears. The FAO Technical Guidelines for Responsible Fisheries provide that national legislation should contain a requirement for the marking of fishing gear and fishing implements, including nets, lines and fish aggregating devices (FADs), in order to identify the owner of the gear.

The IPOA-IUU enumerates other measures that a flag State needs to take into consideration when registering fishing vessels. It emphasises the requirement for the State to ensure that fishing vessels flying its flags, including chartered vessels, do not engage in IUU fishing (paras 34 and 37), avoid flagging vessels with a history of non-compliance (para 36), and deter vessels from reflagging or flag-hopping for the purposes of non-compliance with conservation and management measures (para 38). According to the IPOA-IUU, a flag State is required to avoid flagging vessels with a history of non-compliance except for two conditions. One, the ownership of the vessel has subsequently changed and the new owner has provided sufficient evidence demonstrating that the previous owner or operator has no further legal, beneficial or financial interest in, or control of, the vessel. Two, having taken into account all relevant facts, the flag State determines that flagging the vessel would not result in IUU fishing.

2.2.2 Authorization (or Licensing) to Fish

A flag State can exercise effective control over fishing vessels not only through vessel registration but also through the issuance of licenses or authorizations to fish. Paragraph 40 of the IPOA-IUU provides that flag States would need to consider conducting the separate functions of registration and licensing of fishing vessels in a manner that ensures each gives appropriate consideration to the other. For example, a flag State should consider making its decision to register a fishing vessel conditional upon it being prepared to provide an authorization to fish to that vessel. Furthermore, according to the FAO Compliance Agreement, if a fishing vessel that has been authorised to be used for fishing on the high seas by a Party to the Agreement ceases to be entitled to fly the flag of that Party, the authorisation to fish on the high seas shall be deemed to have been cancelled (art III). Since

the functions of fishing vessel registration and licensing often fall under the jurisdiction of different authorities, cooperation and information sharing between responsible agencies are required. The need to coordinate vessel registration and licensing functions responds to the poor communication between relevant agencies common in many countries. Such problem is exacerbated by outsourcing vessel registration especially for high seas vessels, without taking into account the need for effective flag State responsibility. The FAO Voluntary Guidelines for Flag State Performance provides the minimum requirements for the registration and licensing of fishing vessels and also calls for the exchange of information and coordination of activities among relevant national agencies.

A flag State has the duty to issue licences to fishing vessels conducting operations on the high seas, including areas managed by regional fisheries management organisations (RFMOs) to which the flag State is a member, and areas under the jurisdiction of a coastal State to the fishing vessels of a flag State are allowed to fish under an agreement or arrangement. Article III(5)(a) of the FAO Compliance Agreement specifically provides that no Party shall authorize any fishing vessel previously registered in the territory of another Party that has undermined the effectiveness of international conservation and management measures to be used for fishing on the high seas, unless it is satisfied that two conditions have been met. One, any period of suspension by another Party of an authorization to fish on the high seas has expired and two, no authorization to fish on the high seas for such fishing vessel has been withdrawn by another Party within the last three years.

The effectiveness of a fishing vessel licensing system to combat IUU fishing does not solely depend on the issuance of a valid authorization to fish, but more specifically on the enforcement of the terms and conditions of a fishing license. The UN Fish Stocks Agreement provides that one of the duties of a flag State is to establish regulations for the application of certain terms and conditions on a fishing license (art 18). The IPOA-IUU provides some of the conditions under which a fishing license may be issued. A fishing license contains basic information such as the name of the vessel, and where appropriate, the natural or legal person authorized to fish, as well as the areas, scope and duration of the authorization, and authorized species and fishing gear and other applicable management measures (para 46). Other requirements may also be imposed on a fishing license, such as:

- vessel monitoring systems;
- catch reporting conditions;
- conditions related to transshipment, if permitted;
- observer coverage;
- maintenance of fishing and related logbooks;
- navigational equipment;
- marking of fishing vessels and gears according to international standards;
- use of internationally recognised fishing vessel identification number; and
- compliance with measures related to maritime safety, protection of the marine environment, and other conservation and management measures (para 47).

2.2.3 Vessel Monitoring System

The IPOA-IUU encourages States to implement vessel monitoring systems which includes requiring their vessels to carry VMS equipment on board (para 24). The LOSC provides the right of a coastal State to require vessels of other States that fish in its EEZ to submit certain information, such as vessel position reports (art 62). Similarly, the UN Fish Stocks Agreement provides that one of the duties of flag States with respect to MCS is the development and implementation of VMS in accordance with regional, sub-regional or global programmes (art 18). While the LOSC largely regulates foreign

vessels conducting fishing operation in the EEZs of coastal States, the IPOA-IUU and the UN Fish Stocks Agreement are also applied to national vessels; thus having a wider application.

VMS responds to the international requirement of collecting and verifying fish catch and effort, and other fishing activities for more effective fisheries management. There are different types of VMSs. The more conventional type of VMSs relies on vessel movement report through radio, aerial or surface surveillance, land-based radar, sea-based sonar, observer programs or incidental reports by other fishing vessels or airplanes. This type of VMS is used to monitor areas in the immediate vicinity and is therefore more local in coverage. The other type of VMS is satellite-based. In general, VMS provides monitoring agencies with accurate locations, at periodic time intervals, of fishing vessels participating in the VMS. Newer technologies such as satellite-based VMS which provides real time information from fishing vessels supplement observer reporting on fishing activities of vessel and assist towards integrated fisheries monitoring (IFM). The integration of VMS in fisheries regulations highlights its importance as a management tool and assists in ensuring compliance of fishing vessels with national laws and regulations.

2.2.4 Observer Program

In order to ensure that fishing operations are documented and that fishing vessels comply with conservation and management measures, States are encouraged to establish observer programs. Under the LOSC, States have the right to place observers on board vessels in exercising their sovereign right over marine resources in their EEZs (art 62). This provision applies to foreign vessels fishing in the EEZs of coastal States. There is also a duty under the UN Fish Stocks Agreement to implement national observer programmes, participate in sub-regional or regional observer programs, and permit observers of other States to carry out functions agreed under such programs (art 18). These international instruments, however, do not provide the specific functions of and the process involved in conducting observer programs.

The primary advantage of implementing an observer program is that it collects data required for determining the status of living marine resources and the consequences of commercial fishing operations. Observer programs are usually implemented in order to generate data for fishery science, management and compliance purposes.²³ Implementation of an observer programme for fishery science involves the estimation of total catch and effort, including by-catch and discards, and biological sampling of catches. To ensure compliance with fisheries laws and regulations, observers may be given the right to validate logbooks and inspect documents, visit fishing vessels, and collect catch data. The information obtained from both types of observer programmes is necessary for effective fisheries management.

As a component of MCS, an observer program allows for the verification of reported fisheries data, such as information recorded by fishing vessels in their logbooks, which is an effective means to detect unreported fishing. Observer records and information may also be required as evidence in the prosecution of a violation by a vessel, owner or company. Such evidence will be more admissible if the observer program has developed standardized formats, methods and protocols for recording and handling compliance-related issues. For the purpose of using observer reports in establishing a fisheries violation, there is a need for the competence of observers to be established, particularly in

²³Sandy I. Davies; J. Eric Reynolds, (eds.), *Guidelines for Developing an At-Sea Fishery Observer Programme*, FAO Fisheries Technical Paper No. 414 (Rome: FAO, 2002), p. 5.

the event of litigation, by means of standard training. ²⁴Aside from the proper execution of his or her rights and responsibilities, there is also a need for an observer to have a common understanding of the interpretation of the provisions of relevant legal instruments or agreements.

2.2.5 Boarding and Inspection

The IPOA-IUU encourages States to implement national and internationally-agreed boarding and inspection regimes consistent with international law (paras 24.10 and 80.8). Article 73(1) of the LOSC provides that a coastal State may undertake measures such as boarding and inspection in exercising its rights to conserve and manage living resources in the EEZ. The LOSC does not provide specific measures as to how a coastal State may implement its boarding and inspection scheme. In general, however, a boarding and inspection scheme involves five key steps: detection, approach, boarding, inspection, and disembarkation. ²⁵It may involve a routine boarding and inspection or boarding with suspected violation.

Another aspect of a boarding and inspection scheme is the use of force. Under the LOSC, States are required to fulfil their obligations under the Convention in good faith and exercise their rights, jurisdiction and freedoms in a manner that would not constitute an abuse of right (art 300). Furthermore, States are required to refrain from any threat or use of force against the territorial integrity or political independence of any State, or in any other manner inconsistent with the principles of international law embodied in the Charter of the United Nations (art 301). These provisions must be considered by a coastal State in using force with respect to exercising its right to board and inspect foreign fishing vessels.

While observer programs are most effective in detecting unreported fishing, boarding and inspection regimes are more crucial in determining if an illegal or unregulated fishing activity has occurred. However, as can be gleaned from State practice, an effective legal regime for boarding and inspection in the EEZ does not stop with the acts of boarding and inspection. It also involves seizure of vessels, fishing gears and other fishing implements, and documents and other records, as well as the prosecution of fisheries offenders and application of sanctions and penalties.

A coastal State is also given the right to conduct boarding and inspection on the high seas subject to certain conditions. The UN Fish Stocks Agreement contains elaborate provisions on boarding and inspection on the high seas to ensure the conservation and proper management of straddling and highly migratory fish stocks, some of the provisions of which are applicable with respect to coastal State jurisdiction. The UN Fish Stocks Agreement provides the duties and responsibilities of the inspecting State (and inspectors) and flag States (and vessel masters) in the course of boarding and inspection. Members of RFMOs are given the right to board and inspect fishing vessels flying the flag of another State Party to a regional fisheries agreement subject to agreed boarding and inspection provisions of the RFMO, or the basic procedures for boarding and inspection set out in Articles 21 and 22 of the UN Fish Stocks Agreement. These rights are limited to the inspection of the vessel, its license, gear, equipment, records, facilities, fish and fish products and any documents necessary to verify compliance with relevant conservation and management measures. An inspecting State may also investigate if there is a possible violation conducted by the vessel. If there are clear grounds for

²⁴Karl Laubstein, "Fisheries Observers on Fishing Vessels," in CP Nolan, ed., *Proceedings of the International Conference on Integrated Fisheries Monitoring*, Sydney, Australia, 01-05 February 1999.

²⁵C. Mees, "Points to Remember in Connection with Armed Boardings," *Technical Papers Presented at the Regional workshop on Fisheries Monitoring, Control, and Surveillance*, Kuala Lumpur and Kuala Terengganu, Malaysia, 29 June-3 July 1998, GCP/INT/648/NOR1, pp. 147-150.

believing that a vessel has engaged in any activity contrary to regulations of an RFMO, the inspecting State is required to notify the flag State to enable the latter to investigate and take action, if evidence warrants, against the vessel. The inspecting State may only take an enforcement action against the vessel only after the flag State fails to act on the alleged violation, such as bringing the vessel to the nearest port. A flag State has the obligation to ensure that vessel masters cooperate with and assist in the inspection of the vessel.

2.2.6 Port State Measures

International law recognises the sovereignty of States over their territories and nationals. Once a vessel has voluntarily entered a port, it becomes subject to the laws, regulations and enforcement powers applicable in the internal waters of a port State. Under the LOSC, a port State has the right to take necessary steps to prevent any breach of the conditions associated with a port call (art 25). It may also undertake investigations or institute proceedings with respect to any vessel discharge in violation of applicable rules of international law when a vessel is voluntarily in its port or offshore terminal.

The UN Fish Stocks Agreement establishes the role of port States in fisheries. Article 23(1) of the UN Fish Stocks Agreement provides for the right and duty of a port State to take measures to promote the effectiveness of sub-regional, regional and global conservation and management measures. A port State is given the right to inspect documents, fishing gear and catch on board fishing vessels when a fishing vessel is in its ports or offshore terminals. The UN Fish Stocks Agreement also allows a port State to undertake enforcement actions such as the prohibition of landings and transshipments if it has been established that the catch has been taken in a manner which undermines the effectiveness of a conservation and management measure on the high seas. Such measures need to be applied in a fair, transparent, and non-discriminatory manner.

Examples of measures and enforcement actions that may be applied by port States include: advanced notice of port entry, designation of ports, inspection of fishing vessels, prohibition of fish landing and transshipment, and denial of port entry.

Advanced notice of entry

The IPOA-IUU provides the requirement for fishing vessels and vessels involved in fishing-related activities to provide a reasonable advance notice of their entry into port, a copy of their authorization to fish, details of their fishing trip and quantities of fish on board (para 55). The FAO Model Scheme provides a list of specific information which States may require from foreign fishing vessels prior to their entry into ports, which include details related to the identity of the vessel, purpose of port access, details on fishing authorisation, information about the trip, and information on species caught.

Designation of Ports

Foreign fishing vessels generally call into ports where services are available for their landing and transshipment needs. It is therefore necessary for States to designate ports where such foreign fishing vessels may be admitted. Based on the IPOA-IUU, part of the responsibility to designate ports where foreign fishing vessels may be permitted admission is the need to publicize such ports, and more importantly, ensure that such ports have the capacity to conduct inspections (para 57).

Inspection of Fishing Vessels

Under the IPOA-IUU and FAO Model Scheme, a port State is required to carry out inspections of foreign fishing vessels for the purpose of monitoring compliance with relevant conservation and management measures. There are different elements comprising the inspection of foreign fishing vessels. These elements include the procedure for inspection, what to inspect, the precautions that need to be taken when inspecting vessels, information that needs to be collected, reporting of information to relevant authorities, and safeguarding and confidentiality of information. The procedure starts with vessel identification, inspection of authorisation to fish and other documentation, and examination of fishing gear and fish and fishery products. Vessel identification involves the verification of the validity of the identity documents and confirmation of information through appropriate contacts with flag States and RFMOs. It also includes an examination of whether the vessel has changed flag and its port of registration and ownership. The FAO Model Scheme provides for the rights of the master of the vessel during the inspection, as well as his or her obligation in providing all the necessary assistance and information to the inspector.

After port inspection of a foreign fishing vessel, its documents, fishing gears and other equipment, and fish and fish products onboard the vessel, it is necessary to report the results of the inspection. A port State needs to ensure that the results of the inspection are presented to the master of the vessel and signed by both the inspector and the master. The master would also need to be provided the opportunity to add any comment to the report and contact the relevant authorities of the flag State if he or she is encountering serious difficulties in understanding the report. The FAO Model Scheme also provides that the port State should report on the results of its inspections to the flag State of the inspected vessel, other relevant States, and to relevant RFMOs.

Enforcement Actions

Following an inspection, if there are clear grounds that a foreign vessel in port has engaged in or supported IUU fishing, there are two examples of port enforcement actions that may be undertaken. One of the enforcement actions that may be taken based on the IPOA-IUU (para 56) and UN Fish Stocks Agreement (art 23) is the prohibition of landing and transshipment of fish. This is the most common enforcement action applied by port States. The other action, based on the FAO Port State Measures Agreement is the denial of port access (art 11). Denial of port entry follows the principle that the port State exercises full sovereignty in its ports. In case of force majeure, a port State has the obligation to give port access to fishing vessels. These measures are accompanied by the obligation to report the matter to the flag State of the vessel.

2.2.6 Catch Certification

Based on the IPOA-IUU, trade-related measures to reduce or eliminate trade in fish and fish products derived from IUU fishing could include multilateral catch documentation and certification requirements, as well as other appropriate multilaterally-agreed measures such as import and export controls or prohibitions (para 69). Catch certification is one of the schemes used by RFMOs that require documentation to accompany particular fish and fish products bound for international trade. In RFMO practice, trade documents accompany fish and fish products that enter through international trade by identifying the origin of fish for the purpose of ascertaining levels of unreported fishing. Catch certification is issued by relevant national authorities at the point of harvesting and covers all fish to be landed or transhipped.

The European Union, being one of major importers of fish, has adopted an IUU fishing regulation (EC 1005/2008) that provides for the prohibition of the importation of fishery products obtained from IUU fishing. This objective is implemented through a catch certification scheme. In general, the importation of fishery products into the EU is only allowed when accompanied by a catch certificate, completed by the master of the fishing vessel and validated by the flag State of the vessel. To be valid, the catch certificate must contain all information specified in the template documents shown in Annex II of the EU IUU Regulation, including:

- basic information such as the name of the fishing vessel, home port and registration number, call sign, licence number, Inmarsat number and IMO number (if issued);
- information on the product (the type of species, catch areas and dates, estimated live weight and verified weight landed, as well as the applicable conservation and management measures and any transshipment at sea is also required); and
- information and declaration on export and import of the fishery product (including the vessel name and flag, flight number airway bill number, truck nationality and registration number, other transport documents and container number).

The indirect importation and exportation of fishery products are subject to the validation of a catch certificate by the competent authorities of the flag State of the vessel.

Table 3 summarises the measures adopted under the IPOA-IUU to combat IUU fishing. It shows that the key coastal State measure required to address IUU fishing is an effective MCS. However, in general MCS is a measure that all States are required to adopt and that tools such as vessel registration, authorization to fish, record of fishing vessels, VMS, observer program, boarding and inspection, catch certification and port State measures are specific tools within the MCS system.

Table 3. Measures to Address IUU Fishing under the IPOA-IUU

Flag State Responsibilities	Coastal State Measures	Port State Measures	Internationally-agreed Market Measures	All State Measures	RFMO Measures
Fishing vessel registration	Effective MCS in the EEZ - Regulation of fishing access - At-sea transshipment - Maintenance of logbooks - Authorisation to fish	Prior to entry requirements	Import and export controls	Ratification, adoption and implementation of international instruments	Record of fishing vessels
Record of fishing vessels		Designation of ports	Stock or species specific trade-related measures	Effective control over nationals	IUU vessel listing
Authorisation to fish		Port inspection	Traceability of fish	Action against vessels without nationality	Effective MCS
Chartering arrangement measures		Denial of port access	Harmonized Commodity Description and Coding System	Application of sanctions of sufficient severity	Boarding and inspection

Flag State Responsibilities	Coastal State Measures	Port State Measures	Internationally-agreed Market Measures	All State Measures	RFMO Measures
		Prohibition of landing and transshipment of fish	Catch certification and documentation	Avoid conferring economic incentives to IUU fishing	Observer programme
				Effective MCS	Development of action plans
				National legislation to address IUU fishing	Measures for non-contracting parties
				Adoption of NPOA-IUU	
				Cooperation between States	

2.2.7 Other Measures

There are other MCS measures provided in international fisheries-related instruments that may be used to prevent, deter and eliminate IUU fishing. These measures include the development of national plans of action, effective data collection system, application of sanctions of sufficient severity, exercise of the right of hot pursuit, use of evidentiary standards and admissibility of electronic evidence and new technologies in court, and market-related measures.

2.3 Global Cooperation on MCS to Combat IUU Fishing

2.3.1 International MCS Network

The International Monitoring, Control, and Surveillance (IMCS) Network was established as a voluntary organization in 2001 to provide a mechanism for fisheries law enforcement professionals to share information and experiences to improve the effectiveness of fisheries-related MCS activities through enhanced cooperation, coordination, information collection and exchange among national organizations and institutions responsible for MCS. The IMCS Network operates informally and encourages participation from fisheries managers, investigators, lawyers, foreign service officers, and forensics specialists. In order to enhance cooperation, the IMCS Network focuses on the following activities:

- Collection and hosting of relevant documents, reports, and laws on the Network website;
- Production and dissemination of a Network Newsletter, containing both news articles and original pieces;
- Production and implementation of a country MCS Needs Assessment;
- Organization of a biennial Global Fisheries Enforcement Training Workshop for MCS practitioners to network and exchange information, experiences and lessons learned;
- Organization and implementation of MCS trainings and other capacity building efforts to improve the MCS abilities of member governments;
- Production of analytical responses to “Requests for Information” received from member governments and relevant stakeholders;
- Production of original analytical pieces on IUU trends, new MCS technologies, and additional topics of interest; and

- Development of relationships, cooperation, and information sharing capabilities among members and additional MCS practitioners.

A number of relevant studies, documents, and links on IUU fishing and MCS are available at the IMCS website (www.imcsnet.org).

Except for Comoros and Madagascar, East African States are part of the IMCS network.

2.3.2 INTERPOL Fisheries Crime Working Group

There is also increasing recognition that illegal fishing has escalated to involve transnational criminal groups. Hence in 2013, INTERPOL launched Project Scale to detect, suppress, and combat fisheries crime. The Project's objectives include:

- generating awareness regarding fisheries crime and its consequences;
- establishing National Environment Security Task Forces to ensure cooperation between national and international agencies;
- assessing the needs of vulnerable member countries to effectively combat fisheries crimes; and
- conducting operations to suppress crime, disrupt trafficking routes, and ensure the enforcement of national legislation.

INTERPOL established a Fisheries Crime Working Group under this initiative to develop the capacity, capability, and cooperation of member countries to effectively address fisheries crimes. The Fisheries Crime Working Group aims to facilitate the exchange of information, intelligence, and technical expertise between countries for purposes of fisheries law enforcement. Several countries have cooperated within the INTERPOL network and have called upon the international organization to issue 'Purple Notices' to illegal fishing vessels. INTERPOL's Purple Notices are used to seek or provide information on the modus operandi, objects, devices, and methods used by criminals.

Part 2 Recommendations

Encourage East African nations to accede to relevant international fisheries agreements, particularly the 2009 FAO Port State Measures Agreement

Encourage implementation of the FAO Voluntary Guidelines for Flag State Performance

Develop and/or review national plans of action to prevent, deter and eliminate IUU fishing in order to ensure that identified priority issues are addressed

Review legislation and/or develop specific regulations to implement MCS tools such as fishing vessel registration and licensing, record of fishing vessels, vessel monitoring system, observer program, boarding and inspection, port State measures, and catch certification

Encourage East African States to participate in the International MCS Network and INTERPOL initiatives to address fisheries crime

3 *Regional Framework on Fisheries MCS*

The development of MCS tools, as well as cooperation among nations has been emphasized strongly in international instruments discussed in Part 2. As the Eastern African – Indian Ocean marine fisheries are part of a larger marine ecosystem shared by all countries of the East African region, the effective conservation and management of shared international fisheries resources calls for actions to be undertaken at the regional and sub-regional levels. A number of regional organizations and institutions provide the context and basis for the development and implementation of coordinated MCS measures among the East African coastal States including the existing Regional Economic Communities (RECs) and Regional Fisheries Bodies (RFBs). RFBs play a primary role in the sustainable management and utilization of fisheries resources by means of facilitating regional cooperation. The role of these organizations and institutions in MCS implementation is discussed below.

The African Union has also developed a Policy Framework and Strategy for Reform of Fisheries and Aquaculture, which was adopted by 23rd summit of African Heads of States and Governments in Malabo, Equatorial Guinea, in June 2014. This framework aims to effectively reverse the current trend of loss in order to derive benefits from fisheries resources in African States. To contribute to the implementation of this Policy Framework and Strategy of Reform, the African Union has received support from the European Union to implement a project on “Strengthening institutional capacity to improve the governance of the fisheries and aquaculture sector in Africa”. A key component of improving governance in fisheries is the adoption of an effective MCS system at both the national and regional levels.

3.1 Regional Requirements on MCS

Regional cooperation in MCS is crucial if effective fisheries management, particularly of shared stocks is to be achieved. Bilateral, sub-regional and regional cooperation on MCS can include the exchange of fisheries data, harmonized legislation, implementation of flag and port State control agreements, and combined measures to address IUU fishing. However, regional or sub-regional cooperation entails a number of additional responsibilities for States. These responsibilities include the security of sensitive data, how differences between participating States will be resolved in order to present a unified regional position, and how to take into account differences in economic situations of member States when devising cost sharing arrangements to support the implementation of a regional MCS system. Despite challenges, there are examples of regional organizations which have successfully dealt with issues related to the implementation of MCS measures, such as the South Pacific Forum Fisheries Agency (FFA), the Organisation of Eastern Caribbean States (OECS) Fisheries Unit, the Caribbean International Community (CARICOM) Fisheries Resource Assessment and Management Programme (CFRAMP), the Northwest Africa Subregional Fisheries Commission (SRFC), and the Indian Ocean Tuna Commission (IOTC).

Based on the IPOA-IUU, in order to successfully combat IUU fishing, States, acting through relevant RFMOs may adopt a number of measures:

- strengthen institutional framework with a view to enhancing their capacity to address IUU fishing;
- develop compliance measures in conformity with international law;
- develop and implement comprehensive arrangements for mandatory reporting;
- cooperate in exchanging information on vessels engaged in or supporting IUU fishing;
- maintain records of vessels fishing in the area of competence of a relevant regional fisheries

management organization, including both those authorized to fish and those engaged in or supporting IUU fishing;

- develop methods of compiling and using trade information to monitor IUU fishing;
- develop MCS, including real time catch and vessel monitoring systems, other new technologies, monitoring of landings, port control, and inspections and regulation of transshipment, as appropriate;
- develop within a RFMO, where appropriate, boarding and inspection regimes consistent with international law, recognizing the rights and obligations of masters and inspection officers;
- develop observer programs;
- where appropriate, market-related measures in accordance with the IPOA;
- define circumstances in which vessels will be presumed to have engaged in or to have supported IUU fishing;
- develop education and public awareness programmes;
- develop action plans; and
- where agreed by their members, examine chartering arrangements, if there is concern that these may result in IUU fishing (para 80).

It should be noted though that these measures are generally adopted by RFBs with management functions. However these measures may also be adopted as a matter of policy in other regional organisations to facilitate cooperation amongst States on MCS.

In Table 3 of this Technical Report, it can be observed that the MCS measures that States, acting collectively within relevant RFMOs, may be able to adopt to address IUU fishing are very similar to those discussed in Part 2 of this Report. An exception would be the development of IUU vessel listing. The IPOA-IUU clearly supports the listing of IUU vessels in RFMOs which were developed by States in a collective and fair and transparent manner. The IPOA-IUU does not provide for the listing of IUU vessels by individual countries.

3.2 Fisheries Framework for the African Region

The framework for the conservation and management of marine capture fisheries in Africa forms part of the bigger mission to end hunger and poverty in the continent through the sustainable use of animal resources. The African Union-InterAfrican Bureau of Animal Resources (AU-IBAR) provides leadership in achieving this objective by empowering AU Member States and RECs through the promotion of common position for the region and harmonization of policies and regulations.

Although there has been some recognition of the role of fisheries in sustainable development, policymakers have placed little emphasis on their contribution to national development, food security, and the need to optimize the benefits of these resources to the centre of national development planning. ²⁶Hence, the African Union has taken significant steps to improve the performance of the fisheries sector. In 2003, the New Partnership for Africa's Development developed the Comprehensive Africa Agriculture Development Programme (CAADP) which was endorsed by Member States. The Sirte Declaration in 2004 encouraged the development of African fisheries resources as well as urged regional cooperation in fisheries management. The Declaration adopted at the NEPAD Fish for All Summit in Abuja, Nigeria in 2005 emphasized commitments to the Strategic Partnership for African Fisheries. Consequently, African countries began the dialogue to strengthen the African Voice in

²⁶NEPAD, *Partnership for African Fisheries, Policy framework and reform strategy for fisheries and aquaculture in Africa*, <http://www.africanfisheries.org/knowledge-output/policy-framework-and-reform-strategy-fisheries-and-aquaculture-africa>.

international policy and negotiating platforms. The Conference of African Ministers of Fisheries and Aquaculture (CAMFA I) was convened in 2010 and the Joint Ministerial Conference of Agriculture, Rural Development, Fisheries and Aquaculture in 2014 to respond to the challenges and opportunities in the fisheries and aquaculture sector.

3.2.1 First Conference of African Ministers of Fisheries and Aquaculture (CAMFA I)²⁷

During the meeting of the African Ministers of Fisheries and Aquaculture at the CAMFA I held in Banjul, The Gambia on the 23rd September 2010, the African Ministers expressed concern about the magnitude of IUU fishing as one of the threats facing the fisheries sector. The Ministers agreed on the need for urgent actions at national and regional levels to deter and eradicate IUU fishing. Member States, RECs and RFBs were urged to adopt and implement the IPOA-IUU and port state control measures. In order to curb IUU fishing across the African continent the meeting requested that flag State responsibility be fully implemented by all vessels flying flags of African States. It was recommended that Member States, RECs and RFBs strengthen MCS and foster regional cooperation to curb IUU fishing.

3.2.2 Joint Ministerial Conference of Agriculture, Rural Development, Fisheries and Aquaculture

The Joint Ministerial Conference was held in Addis Ababa, Ethiopia, from 28th April to 1st May 2014 with a theme “Transforming Africa’s Fisheries and Aquaculture for Food and Nutritional Security, Improved Livelihoods and Wealth” and . The key resolutions made by the joint conference and which are relevant to this report were to: (1) endorse the Policy Framework and Reform Strategy; (2) undertake fisheries and aquaculture reforms; (3) develop fisheries and aquaculture as an integral part of the CAADP; and (4) enhance fish trade. The Policy Framework and Reform Strategy for Fisheries and Aquaculture in Africa was approved development. The meeting reaffirmed commitments by Member States to strengthen the MCS capacity including implementation of port states measures, flag State measures and related instruments in order to combat IUU fishing. Member States were urged to implement measures to combat IUU fishing by implementing appropriate plan of action and measures including port State measures.²⁸

3.2.3 Policy Framework and Reform Strategy for Fisheries and Aquaculture in Africa

This Pan African document was endorsed by the summit of African Heads of States and Governments in June 2014, in Malabo, Equatorial Guinea as a blue print for African fisheries and aquaculture development. One of the key priority policy arenas in this document is the sustainable use and conservation of fisheries resources. It is recognized that inadequate cooperation and collaboration among African States contributes to high incidence of IUU fishing in the continent, representing over USD1.5 billion of lost resource rents in 2011 for African countries. Developing and strengthening the institutional framework for MCS for both marine and inland fisheries is seen as means towards combating IUU fishing.

In particular, the priority policy arenas identified in the Policy Framework and Reform Strategy for Fisheries and Aquaculture in Africa as needing reforms are: 1) conservation and sustainable resource use; 2) small scale fisheries development; 3) sustainable aquaculture development; 4) responsible and equitable fish trade and marketing; 5) strengthened regional and sub-regional cooperation; 6) awareness enhancing and human capacity development; and 7) high seas fisheries. The cross-cutting

²⁷The First Conference of African Ministers of Fisheries and Aquaculture (CAMFA), 20-23 September 2010 Banjul, The Gambia.

²⁸Report of the AU Joint Conference of Ministers of Agriculture, Rural Development, Fisheries and Aquaculture, 1-2 May 2014.

issues in the African fisheries and aquaculture sector were identified in this policy document as climate change adaptation and disaster risk management, gender and youth development, finance and investment. Key objectives and summary of strategic actions highlighted for each policy arena.

3.2.4 Various African Union Activities on Fisheries

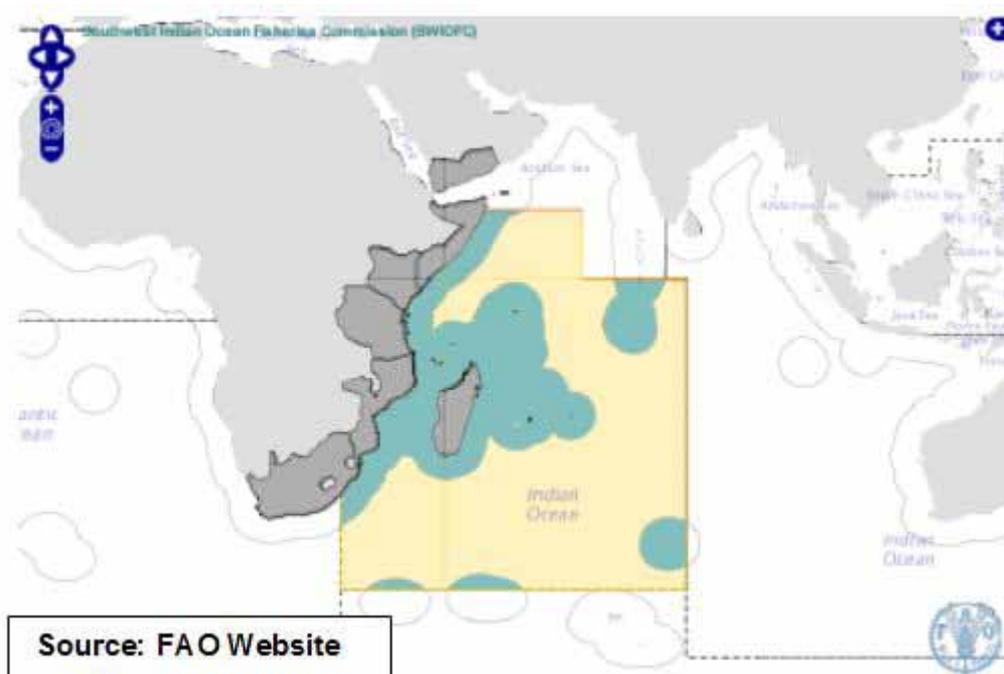
To demonstrate its commitment to improving the fisheries sector and promoting harmonized policies consistent with the Policy Framework and Reform Strategy for Fisheries and Aquaculture in Africa, the African Union has conducted a number of activities, including the Establishment of an African Platform for Regional Institutions in Fisheries, Aquaculture and Aquatic Systems (APRIFAAS), the formulation of criteria and indicators and criteria for alignment of national and regional fisheries and aquaculture policies to provisions of the pan African policy document. The AU-IBAR has also conducted scoping mission on MCS in the IOC region, West, Central, SADC Secretariat and established baseline information on strengthening and/or establishing regional MCS centers .

3.3 Analysis of MCS Capability for Relevant Regional Organizations and Arrangements

MCS are key factors to compliance with internationally or regionally agreed frameworks, policies, plans or strategies for the management and conservation of fisheries resources. Its absence or ineffectiveness is a major result of a poor or insufficient fisheries management. Improved inter-State, State, and regional coordination and information exchange, and support of resource users are known to be foremost factors to success in addition to effective implementation of MCS systems.

In response to the global request for international cooperation against IUU fishing, many States have enforced (following considerable legislative, regulatory, policy and enforcement adjustments) different types of regulatory measures in order to prevent, deter, and eliminate IUU fishing. At the regional level, efforts have also been intensified over the last decades against IUU fishing, particularly through the RFBs by establishing MCS frameworks.

3.3.1 Southwest Indian Ocean Fisheries Commission (SWIOFC)



The SWIOFC is a regional fisheries body established under Article VI of the FAO Constitution. With its Secretariat based in Mozambique, it promotes the application of the provisions of the FAO Code of Conduct on Responsible Fisheries, including the precautionary approach and the ecosystem approach to fisheries management.

Among the functions and responsibilities of the Commission relevant to MCS are:

- to contribute to improved governance through institutional arrangements that encourage cooperation amongst members;
- to keep under review the state of the fishery resources in the area and the industries based on them;
- to promote the collection, exchange, dissemination and analysis or study of statistical, biological, environmental and socio-economic data and other marine fishery information;
- to provide advice and promote co-operation on monitoring, control and surveillance, including joint activities, especially as regards issues of a regional or sub-regional nature.²⁹

Member States include Comoros, Kenya, Madagascar, Mauritius, Mozambique, Seychelles, South Africa, and Tanzania.

SWIOFC has played a crucial role in promoting and facilitating collaboration and cooperation in the region with regard to fisheries issues, serving as a platform for the development of several regional projects. Hence, SWIOFC has provided an important forum for sharing information on MCS and has thus helped promote a better regional coordination of MCS activities that are being done by organizations such as the Indian Ocean Commission (IOC) and the South African Development Community (SADC), as well as by SWIOFC Member States. Coordination on MCS is however challenged by the different MCS capabilities of Member States.

Through funding by the World Bank Group including a total of US\$75.5 million the SWIOFC will contribute towards improvement of fishing-related activities for families living in the coastal communities of the South West Indian Ocean region.³⁰

3.3.2 The Indian Ocean Tuna Commission (IOTC)³¹

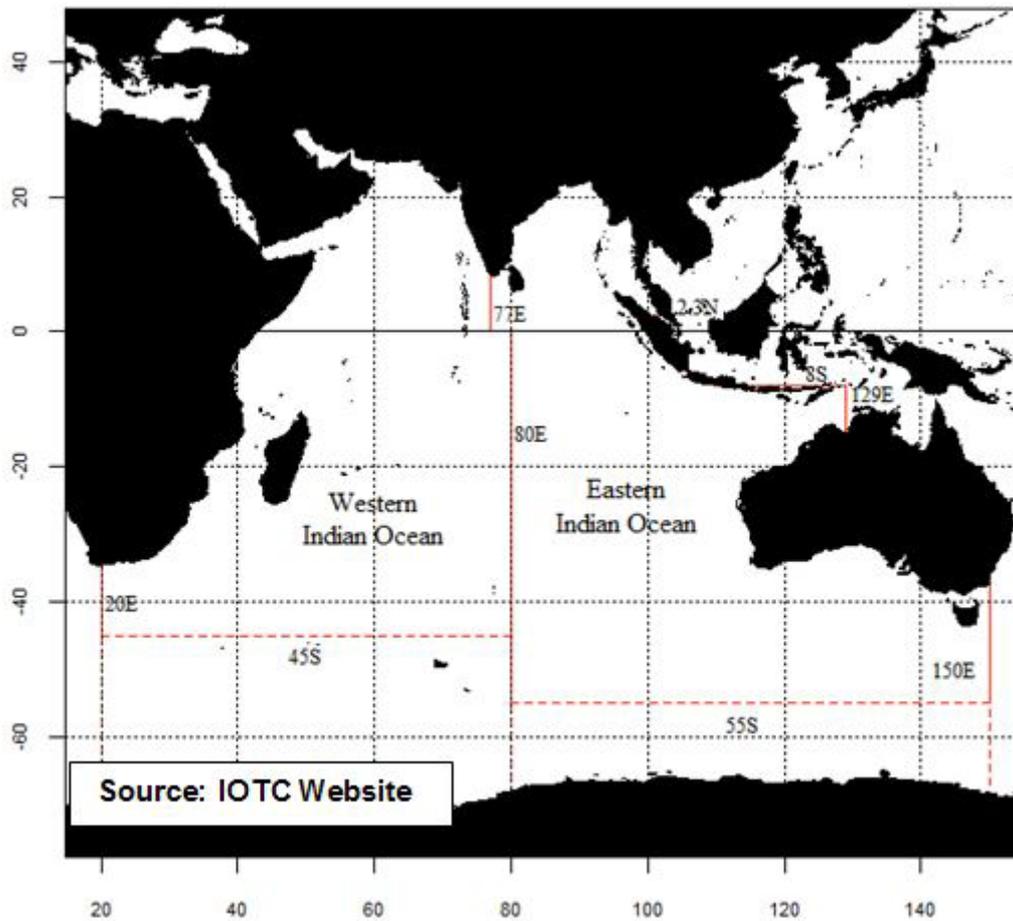
The IOTC in Eastern Africa provides the mechanism for achieving cooperation between and among States participating in tuna fisheries. The IOTC has a responsibility for conserving and managing the tuna stocks in its area of competence. The adoption of conservation and management measures is central to the work of the IOTC, which Member States are required to implement. The adoption of such measures is facilitated through the decision-making procedures of the IOTC. The effectiveness of these measures is reliant upon the commitment of Member States to address issues that are critical to the sustainability of tuna resources under the management mandate of the IOTC. Fundamental to the enforcement of RFMO conservation measures is effective MCS.

The IOTC has adopted a number of MCS related measures including; landing of catch, port inspection and transshipments, vessel registers and information relating to IUU fishing, inspection and enforcement, VMS, and cooperation with non-members thus:

²⁹Southwest Indian Ocean Fisheries Commission, <http://www.fao.org/fishery/rfb/swiofc/en>

³⁰The First South West Indian Ocean Fisheries Governance and Shared Growth Project (SWIOFish1) aims at improving regional cooperation for the nine African countries that border the waters of the South West Indian Ocean. <http://www.worldbank.org/en/news/press-release/2015/02/27/world-bank-boosts-fisheries-in-south-west-indian-ocean-african-countries>.

³¹Indian Ocean Tuna Commission website, www.iotc.org.



- i. Record of authorized vessels (IOTC Resolution 14/04) – The IOTC requires the establishment and maintenance of a record of vessels that are authorized to fish for tuna and tuna-like species in the IOTC Area. Vessel records are essential for the Commission to establish its fishing capacity goals. A record of active vessels and list of IUU vessels are also maintained.
- ii. Port State Measures (IOTC Resolution 10/11) – This measure was developed consistent with the FAO Port State Measures to Prevent, Deter and Eliminate Illegal, Unreported and Unregulated Fishing;
- iii. Vessel registration (IOTC Resolution 13/02) - Regarding vessels registration, the IOTC requires fishing vessels to carry on board documents issued and certified by the competent authority in respect of authorization to fish, vessel name, port in which registered and number of registration, international call sign, names and addresses of owner, length and engine power of vessel. Fishing vessels should also be appropriately marked in conformity with international standards such as the FAO Standard Specification for the Marking and Identification of Fishing Vessels and Gears. Fishing vessels are also required to keep a bound fishing logbook. At the 18th session Members proposed the need to address the challenge of IUU fishing by streamlining the application of the IMO numbers to all vessels greater than 100GT across all RFMOs and making unique vessel identifiers mandatory by 2016.
- iv. Vessel monitoring system (IOTC Resolution 06/03) - The IOTC requires Members to adopt a satellite-based VMS for vessels greater than 15 metres in length overall, registered on the IOTC Record of Vessels which operate in the IOTC Area and which fish on the high seas. At the 18th Session which took place from 1-5 June 2014 in Colombo, Sri Lanka one of the proposals from the CPCs was to improve VMS and observer coverage in order to strengthen MCS in the IOTC.
- v. Regional observer program (IOTC Resolution 10/04) – The regional observer program includes

the verification of documents on board fishing vessels (authorization to fish and fishing logbook), marking of vessels (consistent with information in the IOTC Record of Authorised Vessels) as well as their VMS. Resolution 14/06 provides for an observer programme to monitor at sea transshipments, by placing observers on carrier vessels. Resolution 11/04 establishes a Regional Observer Scheme that includes observers on board fishing vessels and port sampling for artisanal fisheries.³² The observer scheme has the dual role of collecting data and monitoring compliance with IOTC conservation and management measures. Thus, the observer is required, inter alia, to observe and estimate catches in order to identify catch composition and monitor discards and by-catches, as well as record the gear types, mesh size, and attachments employed by the master.³³

As worthy as these measures and proposals are, any conservation and management measures adopted by the IOTC are only effective if member States and cooperating non-members comply with the requirements. Compliance with Resolutions, particularly by industrial and semi-industrial fleets using purse seine, longline and gillnets, is fundamental to the development of rigorous conservation and management strategies in the IOTC.

Organizations such as International Seafood Sustainability Foundation (ISSF) and World Wide Fund for Nature (WWF) have concerns at the level of non-compliance with IOTC Resolution 14/06 on transshipment by large-scale tuna vessels because strengthening compliance with transshipment is critical to the successful elimination of IUU fishing activities.³⁴ These organisations still call for increasing observer coverage on purse seiners to 100 per cent and increasing the coverage on longline vessels via human or electronic means.

3.3.3 South Indian Ocean Fisheries Agreement (SIOFA)³⁵

SIOFA is a regional fisheries arrangement (as opposed to a body) which entered into force on 21 June 2012 as a legally-binding treaty with the objective of ensuring the long-term conservation and sustainable use of non-highly migratory fish stocks in the high seas of the southern Indian Ocean. The Agreement promotes the long-term conservation and sustainable use of fisheries resources in this area by applying principles such as the precautionary approach, ecosystem based approaches to fisheries management and encouraging the development of effective monitoring, control and surveillance measures to ensure compliance. The SIOFA Area of Competence covers the high seas between eastern Africa and Western Australia. East African Member States of this organisation are Mauritius and Seychelles.

Meetings are conducted through a Meeting of the Parties. These meetings review the state of fishery resources, promoting research and cooperation, adopting generally recommended international minimum standards for fishing, developing rules and procedures for monitoring of compliance by vessels and developing measures to prevent, deter and eliminate IUU fishing.

³²IOTC, *Report of the 18th Session of the Indian Ocean Tuna Commission, Colombo, Sri Lanka, 1-5 June 2014.*

³³IOTC, *Resolution 10/04, para. 10(b and c).*

³⁴International Seafood Sustainability Foundation, *IOTC Turns 18, 26 May 2014*, <http://iss-foundation.org/2014/05/25/iotc-turns-18/>

³⁵FAO, *South Indian Ocean Fisheries Agreement*, <http://www.fao.org/fishery/rfb/siofa/en>.



3.4 Other Regional Institutions

Other regional initiatives should be noted, such as the Stop Illegal Fishing FISH-i Africa and the SmartFish Programme of the Indian Ocean Commission. Other organizations, particularly RECs are also important institutions such as SADC and East African Community.

3.4.1 FISH-i Africa³⁶

FISH-i Africa is a task force uniting seven Southeast African coastal States along the Western Indian Ocean that enables authorities to identify and act against large-scale IUU fishing. These are Comoros, Kenya, Mozambique, Seychelles, Tanzania, and Madagascar and Mauritius. This initiative has shown that regional cooperation, coupled with dedicated data analysis and technical expertise can stop illegal fish catch getting into the market, and prevent criminal fishers pursuing their business unhindered.

Under this initiative, Comoros, Kenya, Madagascar, Mauritius, Mozambique, Seychelles and Tanzania share vessel data real-time and access satellite tracking expertise. FISH-i Africa partners with various agencies to deliver its mandate. The Stop Illegal Fishing (SIF) working group of the New Partnership for Africa's Development (NEPAD) Planning and Coordination Agency coordinates FISH-i Africa. Hence, NEPAD provides FISH-i Africa with both legitimacy and a role within the wider policy and strategic framework of African fisheries. The FISH-i Africa model has potential and could be replicated in other African regions.

SIF plays a central role in strengthening cooperation and coordination between governments and partners in order to support the African Union's and NEPAD's agendas and other pan-African and

³⁶FISH-i Africa, FISH-i Film, <http://player.vimeo.com/video/90859684>

international processes to stop illegal fishing in African waters. PEW Charitable Trusts is also a partner under its wider Ending Illegal Fishing Project. The Norway-based Fisheries Analytical Capacity Tank (FACT) helps to identify and track fishing vessels, analyze fishing fleets, ownership structures and crimes associated with illegal fishing. Thus, FISH-i Africa has carried out investigations of cases involving individuals from Asia to Africa to the Middle East in regards to port measures, document checks, de-registering fishing vessels, vessel identification checks, and vessel tracking and location.

3.4.2 Indian Ocean Commission (IOC)

The IOC comprises Comoros, France/Reunion Island (not part of this report), Madagascar, Mauritius and Seychelles. The IOC's principal mission is to strengthen the ties of friendship between these countries and be a platform of solidarity for the entire population of the Indian Oceanic region. Hence, the IOC has championed the cause of small island States in regional and international fora. The Secretariat of the Commission is located in Mauritius. The organisation has a system of rotating presidency of each Member State and the Presidency is currently held by Comoros. The EU is the main development partner of the IOC and accounts for more than 80 per cent of total financial support to IOC.³⁷

Although these Island States have different characteristics (Reunion is a French department; Mauritius and Seychelles are Middle Income Countries whereas Comoros and Madagascar are amongst the Least Developed Countries), these islands share geographic proximity, natural resources and common development issues.

Under the SmartFish Programme, the IOC Member States have been provided with support in addressing issues associated with IUU fishing through regional MCS cooperation. The Member States are therefore able to achieve the following;

- Exchanging VMS and satellite positioning data;
- Collection of data by IOC;
- Collection of observer data;
- Data from neighbouring States (South Africa, Mozambique, Kenya, Tanzania, Somalia);
- Data of vessels licensed; and
- Specific support to national control and monitoring of fisheries centre of the Union of Comoros.

This program is aimed at sustaining MCS activities and ensuring its reliable institutionalization. In addition, smaller regional initiatives established by some countries can be evaluated and expanded, such as the SADC heads of MCS Operation meetings, hosted by the Mozambican Ministry of Fisheries.

There has also been considerable intergovernmental liaison, particularly between some SADC Members, and many concepts have been test driven such as regional multilateral patrols in South Africa, Mozambique, Namibia and Tanzania. These joint patrols have highlighted the multilateral requirement for harmonized action and forged contact on an operational and political level between countries.³⁸ The participation of Tanzania in surveillance missions shows the commitment that unites the region in its efforts to combat IUU fishing. It is also noted that traditionally MCS in the ESA-IO region has focused mainly on industrial fisheries, but as artisanal fisheries may well reach similar total landings as larger fleets, these small scale fisheries have also been included on the overall MCS

³⁷Delegation of the European Union to the Republic of Mauritius, to the Union of the Comoros and to the Republic of Seychelles, http://eeas.europa.eu/delegations/mauritius/regional_integration/indian_ocean_commission/index_en.htm.

³⁸General Description of the SmartFish Programme, http://www.agrotec-spa.net/General_Description.pdf

approach. Close collaboration with SWIOFP, SWIOFC and SADC has been forged.

Although many fisheries data collection systems are in place in the region, there is little coordination, except through FAO, IOTC and to a lesser extent SWIOFC. In the broader regional context, no such data sharing initiative exists at present. This too presents a great opportunity for strengthening regional cooperation and sharing of resources in collective fisheries management. The Programme also addresses flag State and port State measures in relation to MCS and its objectives.

With the financial support of the IOC, a fisheries monitoring centre, based in Moroni, ensures follow-up missions and capacity building in fisheries activities in Comoros EEZ. Five fisheries inspectors regularly participate in regional missions to address issues related to IUU fishing with the aid of patrol vessels. Since 2009, there have been extensive annual registration campaigns to register artisanal motorized fishing boats as a means to evaluate the economic and social importance of the artisanal fisheries sector in the Comoros.³⁹

The IOC implements its regional strategy for surveillance of fisheries through the regional plan for fisheries surveillance. The plan aims to improve the capacities of the Indian Ocean countries to develop, adopt and implement MCS strategies. The plan should strengthen existing national efforts through pooling of resources, improved co-ordination and data sharing.⁴⁰ The measures implemented through the strategy include a ban against transshipment at sea and denial of access to ports for vessels that have been blacklisted by any RFMO, or that which is not included on the “white list” of registered vessels. Measures also include harmonization of national legislation against IUU fisheries, and setting fines at a level that deters illegal activities.⁴¹ MCS training has also been conducted, including a module development workshop to address the MCS capacity needs of members of the IOC.

3.4.3 Southern African Development Community (SADC)

SADC aims to achieve regional integration and eradicate poverty within the Southern African region.⁴² SADC Member States signed the Protocol on Fisheries in 2001 which entered into force on 8 August 2003 and emphasizes the responsibilities of Member States, international relations as well as the effective management of shared resources.⁴³ The East African States with membership in SADC are Mauritius, Mozambique, South Africa, and Tanzania.

The objectives of the Protocol on Fisheries are to promote responsible and sustainable use of the living aquatic resources and aquatic ecosystems of interest to State Parties in order to:

- promote and enhance food security and human health;
- safeguard the livelihood of fishing communities;
- generate economic opportunities for nationals in the region;
- ensure that future generations benefit from these renewable resources; and
- alleviate poverty with the ultimate objective of its eradication.⁴⁴

³⁹Indian Ocean Commission, *Comoros: The annual campaign of registration of fishing boats completes, September 2013*, <http://commissionoceanindien.org/activites/programme-regional-de-surveillance-des-peches/actualites/>.

⁴⁰European Commission, *EU supports Indian Ocean countries' fight against illegal fishing in the region, 24 January 2007*, http://europa.eu/rapid/press-release_IP-07-85_en.htm

⁴¹*Ibid.*

⁴²SADC Overview, <http://www.sadc.int/about-sadc/overview/>.

⁴³International Waters Governance, *Southern African Development Community (SADC)*, <http://www.internationalwatersgovernance.com/southern-african-development-community-sadc.html>.

⁴⁴*Ibid.*

By signing the SADC Protocol the Member States agree to harmonize their domestic legislation with particular reference to fisheries and the management of shared resources, to take adequate measures to optimize fisheries law enforcement resources in order to protect aquaculture and the aquatic environment and safeguard the livelihood of fishing communities.⁴⁵

Within SADC, activities related to the establishment of effective cooperation on MCS among the SADC coastal Member States have been undertaken. A Regional Fisheries Monitoring project funded by the African Development Bank is ongoing. The SADC Regional Fisheries Monitoring project seeks to develop a regional MCS strategy and regional plan of action in relation to IUU fishing. Regional MCS activities are to be coordinated at the SADC MCS Centre based in Maputo, Mozambique. Among the regional activities are enhanced information sharing, the development of a regional fishing vessel register, and regional VMS framework. It is also envisaged that national capacity for MCS activities among member states will be improved.⁴⁶

Under the regional initiative the intention is to improve regional and inter-regional cooperation with a view to eradicating IUU fishing; strengthen fisheries governance and legal frameworks to eliminate illegal fishing; develop a regional MCS strategy and a regional plan of action in relation to IUU fishing; and strengthen fisheries MCS capacity.⁴⁷

On 4 July 2008, the 'SADC Statement of Commitment on IUU Fishing' was signed by Ministers at the Ministerial Conference and it was later endorsed by the SADC Summit. This commitment was followed by various implementing actions:⁴⁸

- Strengthened and successful implementation of SADC coastal State laws relating to IUU fishing;
- Strengthened policy and legal frameworks to address the issue of IUU fishing;
- Stop Illegal Fishing – established to support this process was deemed a success; and
- SADC IUU fishing Task Force was appointed in 2011.

Part of the Stop Illegal Fishing campaign is the first ever multilateral patrol involving four neighbouring countries of South Africa, Mozambique, Tanzania and Kenya.

Monitoring the landings of IUU vessels has dramatically improved in South Africa and in other ports in countries that are signatories to the SADC Fisheries Protocol. SADC countries have signed a protocol on data exchange which has not been implemented due to technical difficulties and the low number of countries with fully functioning VMS systems. In the broader regional context, no such data sharing initiative exists at present. This presents an opportunity for deepening regional cooperation and sharing of resources in collective fisheries management.

3.4.4 East African Community (EAC)

The EAC aims at widening and deepening co-operation among the Partner States in, among others, political, economic and social fields for their mutual benefit.⁴⁹ The ESA-IO which are Members of the EAC are Kenya and Tanzania. Under the ACP Fish II programmes, the objectives include:

⁴⁵Southern African Development Community (SADC). *Protocol on Fisheries*. Maputo, Mozambique, 14 August 2002.

⁴⁶Oceans Beyond Piracy, *South African Development Community: Regional Fisheries Monitoring*, <http://oceansbeyondpiracy.org/matrix/south-african-development-community-regional-fisheries-monitoring>

⁴⁷African Development Bank Group, *SADC Regional Fisheries Monitoring*, <http://www.afdb.org/en/projects-and-operations/project-portfolio/project/p-z1-aaf-008/>.

⁴⁸NEPAD, *Stop Illegal Fishing Case Study Series No. 6*.

⁴⁹African Union Website, *East African Community (EAC)*, <http://www.au.int/en/recs/eac>.

- Improved fisheries policies and management plans at regional and national levels;
- Reinforced control and enforcement capabilities;
- Reinforced national and regional research strategies and initiatives;
- Developed business supportive regulatory frameworks and private sector investment; and
- Increased knowledge sharing on fisheries management and trade at regional level.

A summary of membership and participation in these regional organisations, arrangements and initiatives is presented in Table 4. Not all East African States are members of the same organisations and arrangements or participates in the same initiatives creating competition for similar resources, lack of harmonized activities, and overlapping functions.

Table 4: Membership and Participation in Regional Organizations, Arrangements and Initiatives

Country	SWIOFC	IOTC	SIOFA	Fish-I	IOC	SADC	ESA
Comoros	X	X	-	X	X	-	-
Kenya	X	X	-	X	-	-	X
Madagascar	X	X	-	X	X	-	-
Mauritius	X	X	X	X	X	X	-
Mozambique	X	X	-	X	-	X	-
Seychelles	X	X	X	X	X	-	-
South Africa	X	CNCP	-	-	-	X	-
Tanzania	X	X	-	X	-	X	X

(X) Member (-) Not a Member or does not participate (CNCP) Cooperating Non-Contracting Party

3.5 Regional Cooperation in Fisheries

There are many reasons for East African States to cooperate in establishing a regional MCS system, particularly where the States have a rich marine resource base that is vulnerable to IUU fishing. Regional cooperation among the East African developing States can yield: the exchange of fisheries data for MCS and fisheries management purposes; harmonized legislation; extradition agreements; cost savings and increased negotiating power; implementation of flag and port State control agreements; and combined measures to address IUU fishing activities. In practice, the cost of implementing MCS measures is often a decisive factor in encouraging States to join sub-regional and regional MCS initiatives.

Regional or sub-regional cooperation will often be more successful when:

- there exists an overall regional policy supporting MCS cooperation;
- there is an existing organization that will serve the purpose;
- the States in the area have a common interest in fisheries;
- there is a common language and/or cultural ties;
- fish stocks are shared;
- maritime boundary delimitation issues between the States in question have been resolved or pending resolution, the States involved are willing to cooperate; and
- the political ideologies and policies of the governments are either compatible or well understood and respected.

Regional cooperation will also create additional responsibilities, including: the security of sensitive data; how differences between the participating States will be resolved in order to present a unified regional position; and how to take into account the difference in the economic situations of potential member States when devising cost-sharing arrangements to support an international organization.

Fisheries-related instruments, both at the international and regional levels combined have not only created a broader range of international obligations, standards and approaches to which fisheries laws are intended to aspire, but they have also generated comprehensive new standards and approaches to how fisheries laws, including in relation to MCS, are to be drafted. Harmonization of these national approaches will help achieve the socio-economic objectives of the wider African region.

3.6 Bilateral Cooperation and Fisheries Partnership Agreements

East African States such as Comoros, Madagascar, Mauritius, Mozambique and the Seychelles have entered into bilateral agreements with the EU for purposes of fisheries access. This bilateral agreement is now called Fisheries Partnership Agreements (FPAs) where the EU provides financial and technical support in exchange of fishing rights. FPAs comprise two parts: access rights to the EEZ and sectoral financial support. The sectoral support promotes sustainable fisheries development in the partner countries by strengthening their administrative and scientific capacity through sustainable fisheries management and MCS. The protocols to the individual FPAs contain provisions relating to MCS tools such as authorization to fish, terms and conditions for licences of both fishing and support vessels, record of vessels, recording and communication of catch, fishing gear specification, landing of catch, transshipment of fish, VMS, scientific observer program, application of sanctions, arrest and detention of vessels, information exchange, and settlement of arrest and detention of vessels.

Part 3 Recommendations

Encourage the implementation of relevant provisions of 2014 policy framework and reform strategy for fisheries and aquaculture in Africa

Determine sub-regional priorities in MCS implementation that transcends different memberships and participation in various regional organizations and arrangements

Develop specific sub-regional strategic actions on fisheries consistent with the Policy Framework and Reform Strategy for Fisheries and Aquaculture in Africa

Strengthen sub-regional cooperation on MCS amongst East African States by:

- Establishing formal arrangements and protocols between regional fisheries bodies and arrangements with policy and management functions (i.e. SIOFA, SWIOFC, and IOTC) that will facilitate exchange of information on IUU fishing and data obtained from MCS tools
- Developing joint initiatives between regional fisheries bodies and arrangements and RECs (i.e. SADC, EAC) involving East African States by exchanging information that will achieve common fisheries objectives
- Adopting policy measures within the purview of RECs to encourage cooperation against fisheries crime
- Adopting lessons learnt from successful fisheries programs such as FISH-i Africa and IOC's SmartFish at the sub-regional level
- Engaging in MCS activities with other States of the region
- Conducting regional training on both the legal and practical aspects of Vessel Monitoring System and Observer Program to facilitate cooperation among legal and technical personnel

Ensure that any formal arrangement that will be developed within the East African sub-region have provisions that will enable wider cooperation with other African sub-regions

Investigate how the planned SADC Regional Fisheries MCS Coordinate Centre can facilitate MCS cooperation in the East Africa

Develop functional bilateral cooperation in fisheries in shared areas and maritime zones pending maritime boundary delimitation agreements

Incorporate provisions of fisheries partnership agreement and other bilateral cooperation arrangements in domestic legislation

4 Domestic Framework on MCS

The basis for any fisheries management and MCS regime is a robust legal framework. A modern, comprehensive fisheries law, consistent with rights and obligations under global and regional fisheries agreements and internationally recognized “best practice” models would be expected to incorporate key principles of fisheries management such as ecosystem approach to fisheries, precautionary approach to fisheries, environmental impact assessment, effective data collection and management, and effective MCS. With respect to MCS, fisheries legislation would need to have provisions on the following matters:

- the authorisation of, powers, functions and duties of inspectors, authorized officers and observers (including powers to search, seize items, require vessels to go to port, etc);
- establishment of observer schemes, port State inspection schemes, and VMS (including provisions on how these schemes are to be applied);
- establishment of a record of fishing vessels (for both commercial and small scale fisheries);
- complementary licensing controls, including authorization to fish on the high seas;
- data collection and submission, including confidentiality of information;
- judicial proceedings for fisheries offences and treatment of evidence, including electronic evidence; and
- application of administrative and criminal sanctions, as applicable.

Domestic legislation plays an important role in the effective development and implementation of MCS measures. Apart from providing for the powers of authorized officers, the key roles of domestic law include increasing regional and international cooperation in order to reduce the incidence of IUU fishing, increasing the transparency of fishing activity by improving monitoring programs, particularly through VMS; identifying enforcement issues relating to maritime boundaries and delimitation; facilitating the use of information derived from monitoring and surveillance to promote compliance; and promoting safety procedures for fisheries officers in undertaking MCS-related functions.

4.1 Analysis of MCS Framework for East African States

The MCS frameworks for Comoros, Kenya, Madagascar, Mauritius, Mozambique, Seychelles, South Africa and Tanzania are examined below.

4.1.1 Comoros

Fisheries in Comoros is mainly artisanal using deep handline fishing. In addition to this small scale fishery, there are also longline and purse seine industrial fishing targeting tuna for export.⁵⁰ Fish catch is estimated at 162,000 tonnes per year with an estimated value of 14.7 million contributing about 8 per cent to national GDP and 5 per cent to foreign exchange.⁵¹

The Fisheries Administration of Comoros is under the supervision of the Vice President in charge of Production, Environment, Energy and Handicrafts. The General Directorate of Fisheries Resources deals with fisheries planning and regulation while the Centre for Fisheries Monitoring and Control is responsible for MCS operations in the country.⁵²

⁵⁰ACP Fish II, Final Technical Report, Market Study on By-Catch from the Tuna Fishery Industry in the Indian Ocean: Region Southern and Eastern Africa (European Union, 2013), p. 24.

⁵¹Ibid.

⁵²Ibid.

Comoros does not have a proper fisheries policy as the sector is addressed under the agricultural policy. Through the assistance of the FAO, a fisheries legal framework and national development strategy has been developed for Comoros.⁵³ Due to the lack of availability of relevant legislation and documents in the English language, very little assessment on the legal framework was conducted in this project. However, the study conducted by IOC SmartFish Programme on the MCS capacity assessment for the Eastern and Southern African region of the Indian Ocean reported that a pilot project has installed a VMS system, which aims to monitor the tuna fleet in the Comoros, but is not functioning due to technical difficulties.⁵⁴ The ports of Comoros are also relatively underdeveloped which are only suitable for small vessels. The IOC SmartFish report on MCS Capacity Assessment also presents numerous gaps in the MCS framework of Comoros and suggests that there are very limited MCS tools in the country, focusing mainly on the licensing of industrial offshore fishing sector and semi-industrial shrimp fishery.

Although some MCS tools have been adopted by Comoros such as vessel registration and licensing, such measures may be improved such as the implementation of stricter conditions for fishing activities. Capability for boarding and inspection, as well as air and sea surveillance assets can also be increased. The lack of supporting legislation has been identified in the survey as a major impediment to the effective adoption and implementation of MCS in the country.

A copy of Comoros fisheries related legislation in English was not obtained, hence the analysis is only limited to available information found in secondary references and the survey response.

4.1.2 Kenya

Kenya's marine fisheries contribute on average 4 per cent of the total national fish landings.⁵⁵ The inshore marine fish species are mainly exploited by local fishers, while the offshore resources outside the territorial waters are exploited mainly by distant waters fishing nations. Foreign access to Kenya's tuna resources has been regulated through direct licensing since 1996 to date. Kenya has licensed EU and Asian purse seiners and longliners (Spain, France, China, Indonesia, and Japan). Only a small quantity of catch from the EEZ is landed in Kenya, primarily tuna loins for processing for export.

The development, utilization, conservation and management of Kenya's fisheries resources is governed by the Fisheries Act 1989, as amended in 1999. Fisheries management in Kenya takes a participatory ecosystem approach. The main fisheries management systems include an open-access fishing regime as well as Co-management, where resource users are involved in the decision-making processes, the implementation of fisheries measures collectively decided upon, and enforcement. The government also involves the fishing community in the licensing process, where only those who adhere to the rules are cleared by the Beach Management Units to be licensed. Participatory approaches to fisheries management emphasize ownership of the fisheries resource by the resource users. Consultative activities with fishers and other stakeholders and interested groups are encouraged when developing policies and legislation to manage fisheries resources.

Under Kenyan legislation, foreign fishing vessels are not allowed to access the territorial sea and are limited to the part of the EEZ between 20 and 200 nautical miles. Important conditions are attached

⁵³Ibid

⁵⁴Per Erik Bergh, *Indian Ocean Commission, SmartFish Programme, Implementation of a Regional Fisheries Strategy for the Eastern-Southern Africa and Indian Ocean Region, Comprehensive Review of MCS Capacity in the ESA-IO Region, SF/2012/14 (IOC, 2012)*, p. 8.

⁵⁵FAO, *Fisheries and Aquaculture Country Profiles, Kenya*, www.fao.org/ftp://ftp.fao.org/

to the access permits requiring the captains of the vessels to fit the vessels with VMS and provide information on their fishing, the fish catch on board at intervals of one week, make it possible for government officers to be able to board their vessels. They are also required to report on any non-target fish species or other marine organisms, particularly marine mammals and turtles incidentally caught and returned to the water, as well as the total bycatch landed or discarded at sea.

There is no fully functional MCS unit in Kenya. Currently, no surveillance of Kenya's EEZ is carried out.⁵⁶ However, a marine fisheries MCS strategy and action plan has been developed under the Kenya Coastal Development Project. In addition, the Fisheries Management and Development Bill of 2012 ensures that MCS is entrenched as it creates the Kenya Oceans and Fisheries Advisory Council. A training manual for MCS working groups at the operational level has also been developed. The MCS strategy for Kenya aims to pursue clearly defined objectives, namely:

- promoting an effective institutional and legal framework for an operational coastal and offshore MCS system;
- promoting responsible and sustainable utilization of the coastal and offshore fisheries resources; and
- strengthening MCS infrastructure and human resource capacity.

An observer scheme has not been introduced in Kenya, however earlier preparations were made in the early years of 2010 by training observers under the Southwest Indian Ocean Fisheries Project. The main challenge is that the current authorized vessels are too small to accommodate observers.⁵⁷ The observer scheme has not been developed because the fishing fleet is artisanal of length overall less than 24 meters. Field observation of artisanal catches commenced in 2013 covering about 20 small fish landing sites across the entire shorelines with sufficient sampling frequency.⁵⁸

Even though Kenya has developed standard operating procedures to implement the EU IUU regulations and its obligations and commitments under regional fisheries bodies and arrangements, there are very few regulations implementing the Fisheries Act 1989, including port State measures, VMS, appointment of authorised officers and observers, and fisheries enforcement.⁵⁹

4.1.3 Madagascar

Madagascar has three main fisheries sectors, namely traditional, artisanal and industrial harvesting a total of 142,000 tonnes in 2005 (including aquaculture). Fisheries contribute to GDP at 8 per cent with a value of fisheries at USD160 million. Shrimp and tuna are the key export commodities of the country.⁶⁰

The Ministry of Fisheries of Madagascar is the agency responsible for fisheries management. Enforcement and surveillance are the responsibility of the Centre for Surveillance of Fisheries which operates under the authority of the Minister.⁶¹ The Centre is equipped with a control centre in Antananarivo and satellite stations in Mahajanga and Antsiranana which equipped industrial fishing vessels with VMS. There are two offshore patrol vessels, a coastal patrol, a set of zodiacs for inshore

⁵⁶KCDP-MCS Interagency Team, *Fisheries Monitoring, Control And Surveillance (MCS) Capacity Needs Assessment Report For The Marine And Coastal Fisheries In Kenya*.

⁵⁷IOTC, *Kenya National Report to the Scientific Committee of the Indian Ocean Tuna Commission, 2013*

⁵⁸*Ibid.*

⁵⁹IOC, *Implementation of a Regional Fisheries Strategy for the ESA-IO*, p. 33.

⁶⁰FAO, *Fisheries and Aquaculture Country Profiles, The Republic of Madagascar*, www.fao.org.

⁶¹IOC, *Implementation of a Regional Fisheries Strategy for the ESA-IO*, p. 95.

and lagoon patrols and 4x4 vehicles for coastal patrols.⁶² The Centre conducts surveillance operations at sea and within ports, as well as a scientific observer program. It also monitors catches, collects scientific data, and records compliance by vessels. These MCS measures though are only applied to the shrimp and tuna fisheries and not to artisanal vessels. The MCS system is funded almost entirely from the contribution of the EU Fisheries Partnership Agreement with Madagascar.⁶³ Random at sea inspection and establishment of check points may further address illegal fishing activities.

The fishing vessel licensing system in Madagascar implements strict terms and conditions such as area and species restrictions. Penalties for breach of licensing conditions include the withdrawal or suspension of license and confiscation of vessel, fishing gear or catch. A system between fishing vessel registration and licensing exists although coordination between relevant agencies can be improved and procedures need to be well-defined. Madagascar also follows strict port State measures for foreign vessels and catch certification system to comply with EU IUU Regulations.

A copy of the Madagascar fisheries law in the English language was not obtained, hence the analysis is only limited to available information found in secondary references and the survey response.

4.1.4 Mauritius

Mauritius EEZ has stock of various fish, including pelagic and demersal species. The island-based artisanal fisheries, the offshore demersal fishery of the banks of the Mascarene Plateau and the Chagos Archipelago, and the tuna fishery in the Western Indian Ocean are the fisheries resources exploited. Catch quotas for the banks fisheries have been imposed since 1994 and the number of vessels operating on the smaller banks is limited through a licensing system. Fish is an important source of protein in the local diet and the per capita consumption of fish stands at 20 kilograms (representing one quarter of animal protein intake).⁶⁴ The fisheries sector accounts for one percent of GDP and employs some eleven thousand people.⁶⁵

Although local production does not suffice to cover market needs, it provides employment and returns for inhabitants of coastal regions. The government encourages lagoon fishermen to venture into the outer reef fisheries to fish around Fish Aggregating Devices (FADs) maintained and renewed by the government. The tuna fishery which is the major industrial fishing sector of Mauritius exploits the tuna fishery of the South West Indian Ocean. Land transshipment constitutes a very important related activity. The total fish harvested annually in Mauritius is estimated to be about 7,829 tonnes in 2010 with fisheries contributing about USD622 million, representing 1.3 per cent to the GDP (2010).⁶⁶

Mauritius offers a platform for the transshipment, warehousing, handling, processing and re-export of fish and fish products.⁶⁷ Port Louis is an important transshipment base with good port and storage facilities for tuna. Tuna canning commenced in 1972. To date, Mauritius has been very successful in developing a thriving tuna cannery sector. The export of canned tuna yielded €209 million in 2009.⁶⁸ A total of €140 million a year is generated in port revenue and a similar amount from tuna

⁶²*Ibid*, p. 96.

⁶³*Ibid*.

⁶⁴FAO, *Fishery Country Profile, Mauritius*, (FAO, 2006) ftp://ftp.fao.org/FI/DOCUMENT/fcp/en/FI_CP_MU.pdf

⁶⁵*Ibid*.

⁶⁶IOC, *Implementation of a Regional Fisheries Strategy for the ESA-IO*, p. 97.

⁶⁷ESA, *Meeting on Trade and Sustainable Approaches to Fisheries Negotiations under WTO/EPA*, Labourdonnais Waterfront Hotel, Port Louis- Mauritius, 2-4 May 2007.

⁶⁸*Mauritius, Report on Tuna Fisheries in Mauritius*, IOTC Thirteenth Session of the Scientific Committee, Mahé, Seychelles, 6-10 De-

processing export earnings.⁶⁹ Asian tuna longliners are landing or transshipping an average of 17,500 tonnes of tuna annually.⁷⁰ Fishing agreements are in place with the EU, Seychelles (on a reciprocity basis) and Japan for fishing within the Mauritian EEZ. All foreign vessels need to have a licence to fish in Mauritian waters. Local investment and joint ventures are also encouraged in tuna fisheries.

The Fisheries and Marine Resources Act 2007 provides for licensing of local and foreign boats and vessels. Local boats or vessels are also required to be registered prior to the issue of fishing licenses. The major IUU activity in Mauritius is potential poaching from unlicensed foreign vessels and illegal transshipment of tuna catches at sea in order to conceal the origin of the fish.

The MCS system in Mauritius involves the Fisheries Management Division and the Fisheries Protection Service, National Coast Guard (NCG), Mauritius Port Authority and the Ministry of Information and Communication Technology. All licensed boats and vessels are required to be VMS compliant and may be requested to carry observers.⁷¹ The Ministry of Agro-Industries and Fisheries has recently negotiated a protocol for the satellite monitoring of EU vessels fishing in the EEZ.⁷² A VMS was set up in 2005 with the following objectives:

- to assist in the identification of vessels fishing illegally without license in Mauritius;
- to identify licensed fishing vessels that may be fishing in contravention of their licence conditions;
- to monitor the activities of Mauritian flagged vessels operating within the EEZ of other countries; and
- to provide a comprehensive record of the activities of all fishing vessels that wish to land fish in Mauritius for subsequent export in part fulfilment of Mauritius' port responsibilities.

The VMS is being managed by a Fisheries Monitoring Centre (FMC) based at the Albion Fisheries Research Centre. The FMC is able to have near real time positions of the vessels, their course and speed. This information provides an important tool in the monitoring of the activities of the licensed vessel. The National Coast Guard is also equipped with an FMC Workstation to enable data to be obtained from the main FMC for policing purposes.⁷³ The setting up of VMS has necessitated the promulgation of relevant regulations to make it mandatory for all licensed fishing vessels to be equipped with transponders that will send their GPS position every two hours to the FMC.

The Ministry of Fisheries in Rodrigues has adequate land based infrastructure and facilities needed to carry out MCS operations: with office space, computers and internet available, as well as satisfactory transport. The Ministry lacks patrol vessel capacity but recent regional cooperation with IOC MCS project has contributed to an improvement. Three aircraft provide air patrol. Eight officers were trained as observers, five under the SWIOFP and the other three under the IOC MCS project. Trained observers to embark on board foreign and local fishing vessels are under consideration.⁷⁴ All foreign fishing vessels calling to Mauritius ports are inspected upon arrival and during offloading. The MCS workforce consists of 286 people including 11 Fisheries officers, 2 Customs officers, 2 Health

ember 2010.

⁶⁹Greenpeace, *Taking Tuna Out of the Can: Rescue Plan for the World's Favourite Fish* (2007)18.

⁷⁰Mauritius, *Report on Tuna Fisheries in Mauritius, IOTC Thirteenth Session of the Scientific Committee, Mahé, Seychelles, 6-10 December 2010.*

⁷¹IOC, *Implementation of a Regional Fisheries Strategy for the Eastern-Southern Africa and Indian Ocean Region*, p. 98.

⁷²Stop Illegal Fishing, Mauritius, http://www.stopillegalifishing.com/doc/publication/eng/mauritius_country_profile.pdf

⁷³S. C. Bauljeewon, *National Report on Tuna Fisheries in Mauritius, IOTC, Fourteenth Session of the Scientific Committee, Mahe, Seychelles, 12-17 December 2011*, <http://iotc.org/sites/default/files/documents/proceedings/2011/sc/IOTC-2011-SC14-NR18.pdf>.

⁷⁴*Ibid*

inspectors, 2 immigration officers and 264 Fisheries Protection Service.⁷⁵

The fisheries legislation of Mauritius is supported by a number of regulations not only on MCS but also fisheries management as a whole, which presents a good framework for an effective implementation of MCS. Some of these regulations also set out characteristics of activities that may be considered illegal fishing for the purpose of enhanced enforcement. These regulations, which implement specific sections of the Fisheries and Marine Resources Act 2007 are on toxic fish (2004), prohibition of the use of hooks of small size (2011), extension of net fishing season (2012), export of fish and fish products (2010), import of fish and fish products (2012), fishing of sea cucumbers (2012), licence and fees (2013), and marine protected areas (2007). There is specific MCS regulation on vessel monitoring system (2005); however no other regulations have been found on other key MCS measures such as observer program, port State measures, catch certification and boarding and inspection.

4.1.5 Mozambique

Mozambique has rich fisheries resources, which are divided into marine capture, inland capture and aquaculture. Marine fisheries account for more than 90 per cent of the total fisheries production with an average annual catch of about 120,000 tonnes, 80 per cent of which are caught by artisanal fishers.⁷⁶ The main marine resources compose of crustaceans (prawns, deepwater shrimp, crayfish, lobsters and crabs), marine finfish (demersal and pelagic species mainly grouper, snapper, emperor and sea bream also high migratory tuna species of yellow fin, big eye and albacore, swordfish and shark) and cephalopods and molluscs (squid, octopus, sea cucumbers, bivalves),⁷⁷ which are of great commercial value and most of which are bound for the export market. EU remains the largest market for Mozambican fishery products.⁷⁸ Even though there is a significant catch by artisanal vessels, foreign fishing access is also a critical aspect of the fisheries development of Mozambique.

The legal basis of the Mozambican fisheries is the Fisheries Law 3/90 which provides for a fisheries management regime based on total allowable catch and quotas and limited entry regulations through licensing and effort allocation. There are also specific regulations on closed seasons and mesh size. The management measures are revised on a regular basis using results of stock assessment and economic performance of fleet.⁷⁹ The Fisheries Regulations Decree 43-2003 not only contains details on input and output control and technical fisheries conservation measures, but also provides requirements on vessel construction, marking of fishing gears, vessel charter for both Mozambique and foreign vessels, and data collection. Specific MCS regulations are also available such as licensing for artisanal, semi-industrial and industrial fishing vessels, authorisation to fish on the high seas, transshipment in port or at sea, departure from Mozambique waters, port entry and departure, landing of fish by foreign vessels, inspection of vessels, and port State enforcement. Regulations are also available on the monitoring of fishing activities which are mainly conducted through daily fishing logbooks, catch reports, satellite based VMS, and embarkation reports. In the Fisheries Regulations Decree 43-2003, there are also general obligations of vessel masters with respect to allowing embarkation officers to perform their duties.

⁷⁵ IOC, *Implementation of a Regional Fisheries Strategy for the ESA-IO*, p. 98.

⁷⁶FAO, *Fishery Country Profile, National Fishery Sector Overview, The Republic of Mozambique* (FAO, 2007) ftp://ftp.fao.org/FI/DOCUMENT/fcp/en/FI_CP_MZ.pdf.

⁷⁷*Ibid.*

⁷⁸USAID, *Competitiveness of Mozambique's Fisheries Sector* (USAID, 2010), p. 3.

⁷⁹FAO, *Fishery Country Profile of Mozambique 2007*.

Under the Mozambique fisheries law, the Fisheries Management Commission is the consultative body of the Fisheries Administration that provides advice on fisheries conservation and management. A Fishing Co-management Committee was also established as the participatory management forum at local, district and provincial levels.

Within the framework of the Fisheries Cooperation Programme between Mozambique and Norway, the Nordenfjeldske Development Services (NFDS) has established a permanent presence in Mozambique since 2006. It provides fisheries MCS experts to the Ministry of Fisheries to assist in the coordination, planning, delivery and training to implement the National MCS Strategy. As a result, Mozambique has been a key player in other projects such as FISH-i Africa. Mozambique is also to be the host country for the SADC Regional Fisheries MSC Coordination Centre. This regional centre's mission will be to coordinate fisheries MCS and enforcement activities, set up a platform for the implementation of a regional Patrol Plan, support capacity building for implementation of the SADC Protocol on Fisheries, and develop training modules.

Mozambique is currently enacting an updated fisheries legislation, however as the copy obtained is not in the English language, this Technical Report has not included an analysis of the new law.

4.1.6 Seychelles

Seychelles has an extensive EEZ and is located in a rich tuna belt. It has developed to become the regional hub for industrial tuna fisheries and is also host to the IOTC. The contribution of fisheries-related activities in Seychelles to GDP and foreign exchange exceed that of tourism, while exports of fishery products account for over 97 per cent of all exports.⁸⁰ The development of industrial tuna fisheries has encouraged the development of infrastructure for reception and handling facilities for fisheries in general. Port Victoria is the principal tuna transshipment port in the region.

Seychelles is the main base for EU tuna purse seiners in the western Indian Ocean, mainly French and Spanish, with a well-developed supply chain for tuna resources. The EU purse seiner fleet makes contributions through the FPA, private licenses and other related payments and vessel expenditure in Victoria. The tuna fishery is managed regionally through the IOTC. Overcapacity in the artisanal fishery appears to have caused overexploitation in some areas. The main IUU activities in the artisanal fishery are fishing during closed season and use of unlicensed fishing gear. There is also potential illegal fishing by foreign unlicensed vessels in the tuna fishery including transshipment at sea; under reporting by licensed fishing vessels; and non-compliance by Seychelles flagged foreign vessels.⁸¹

The sustainable management of marine resources in Seychelles is the responsibility of the Seychelles Fishing Authority as stipulated in the Fisheries Act 2001. Seychelles fisheries are managed through licensing of vessels. In the industrial fishery effort controls are applied through entry limitation. The artisanal fishery is open access and excess fishing effort, especially in inshore areas, has led to localized over-exploitation. Other regulations include shark finning (2006) and whale shark protection (2003). The country also has legislation on the control of foreign fishing vessels (Control of Foreign Fishing Vessels Decree 1979). Under these regulations, no foreign vessel is allowed to fish in the Seychelles EEZ without a licence, and is required to stow its fishing gears unless provided a license to fish. Overall, both domestic and foreign vessels are required to follow strict and specific licence

⁸⁰S F Walmsley, C T Barnes, I A Payne and C A Howard, *Comparative Study of the Impact of Fisheries Partnership Agreements (2007). Technical Report (MRAG, CRE & NRI, 2007).*

⁸¹*Ibid.*

conditions. The regulations also provide for the powers of authorized officers such as boarding and inspection, and contain provisions on the forfeiture of catch and provision of a satisfactory bond upon detention. Apart from the fisheries legislation, Seychelles also enacted a law on the export of fishery products (Chapter 77A) and adopted an export of by-products regulations which mainly focuses on quality and food safety and not on catch certification for purposes of prohibiting the trade of fish derived through illegal means.

The Seychelles Fishing Authority has good infrastructure and facilities conducive to carry out MCS operations. MCS is the responsibility of the MCS section of the Fisheries Management Division of the Authority. The MCS section ensures compliance with the provisions of the Fisheries Act 2001 and implementing regulations. The Fisheries Monitoring Centre monitors the movement of licensed fishing vessels and foreign vessels flying the Seychellois flag through the use of a satellite dependent VMS since 2002.⁸²

The FMC also processes catch report data; authorizes the landing of catch outside Seychelles' waters; and ensures that the licensing unit maintains an updated register of licensed local and foreign fishing vessels. Seven enforcement officers (inspectors) carry out the daily enforcement of national laws; inspecting vessels for compliance and perform patrols within either national or regional areas alongside the National Coastguard who provide the patrol equipment together with a leased fisheries patrol vessel. These MCS measures are also implemented as part of Seychelles' obligations under regional fisheries management agreements. The country also implements a catch certification system based on EU and regional requirements.

The MCS department of the Seychelles Fishing Authority consist of 22 people. Seven are inspectors, 5 observers are employed for the industrial tuna fishery, and 5 officers are working in the FMC, 2 officers deal with licensing and 3 officers work with the VMS.⁸³ Training is a priority for SFA and basic courses are provided ad-hoc in relation to law, VMS operations, and inspection procedures.

4.1.7 South Africa

South Africa has a long coastline and vast EEZ that is home to a rich diversity of fisheries resources. In 2007, the reported fish production in South African waters exceeded 600,000 tonnes with a value of more than USD200 million dollars in net fish exports.⁸⁴ Because of the different ecosystems and irregular coastline, South Africa's marine fisheries are diversified both with respect to species caught and gear deployed. There are 22 commercial fisheries, but the small pelagic fishery is the largest by volume and forms the bulk of fish production.⁸⁵ Per capita fish production in South Africa is relatively low and most of the fish is processed and exported. Although fisheries play an important role in coastal economies, the contribution of the sector to the national GDP is comparatively small. The country's marine resource management program is divided into four fishing sectors: offshore and high seas, small scale, recreational fishing, and inshore.

The legal basis for fisheries management in South Africa is the Marine Living Resources Act 18 of 1998. It provides for the conservation of the marine ecosystem, the long term sustainable utilization of the marine living resources and access to exploitation, utilization and protection of certain marine

⁸²IOC, *Implementation of a Regional Fisheries Strategy for the Eastern-Southern Africa and Indian Ocean Region*, p. 36.

⁸³*Ibid.*

⁸⁴FAO, *Fishery Country Profile, National Fishery Sector Overview, The Republic of South Africa (FAO, 2010)* <http://www.fao.org/fishery/facp/ZAF/en>.

⁸⁵FAO, *Fishery Country Profile, of South Africa 2010*.

living resources in a fair and equitable manner. The Act provides the comprehensive framework for the determination of allowable catch and priority fisheries and fishing areas, as well as the licensing regime for local, foreign and high seas fishing. The country has adopted a number of regulations implementing provisions of the Act, such as on marine recreational fishing, use of fishing harbours, levy on fish products, and fishery-specific regulations. South Africa has also enacted a number of relevant environmental and biodiversity legislation, particularly on seabirds and seals and marine protected areas. Draft regulations on small scale fisheries are currently undergoing public consultations.

Fisheries is one of the key functions of the Department of Agriculture, Forestry and Fisheries. The Marine Living Resources Act establishes various institutions that will ensure that the country meets its socio-economic and management objectives such as the Fisheries Transformation Council. The Department has several directorates that have specific responsibilities related to fisheries.

South Africa has an established MCS program which implements the Marine Living Resources Act 18 of 1998 and has three key components: Compliance, Monitoring and Surveillance, and deployment of Fisheries Protection Vessels.⁸⁶ Unlike in other States in East Africa, South Africa has a monitoring and compliance program for specific fisheries such as hake longline, hake trawl, hake handline, abalone, shark longline, swordfish longline, toothfish, small pelagic purse seine, West coast, nearshore, offshore and South Coast rock lobster, traditional linefish, squid, and recreation and subsistence fisheries. Monitoring and compliance is conducted by fishery control officers who have the power to inspect local commercial fishing vessels at landing sites, as well as foreign fishing and fish carrier vessels. Their responsibilities include verifying if fish quota allocation is not exceeded, checking compliance with terms and conditions of a fishing licence, verification of relevant documents during inspection, confirming if vessels are carrying a functional VMS transmitter onboard, monitoring of catch during offloading and transshipment. These officers also ensure that vessels comply with relevant RFMO conservation and management measures. They also detect serious offences and issue fines for minor offences; otherwise serious and repeated offenders are referred to the enforcement committee. Fishery control officers also check by-catch against the total hake landings and every import and export documents, health certificates and certificates of origin. As part of intensifying enforcement efforts, South Africa conducts inspections on fish processing establishments to determine legality of fish, conduct coastal patrols, road blocks and vehicle control points and inspect restaurants and fish shops for illegal catch.

The Monitoring and Surveillance Directorate (which was previously the Special Investigations Unit) was established to investigate and persuade prosecution of high profile offenders and syndicates contravening the provisions of the fisheries law. The Monitoring and Surveillance directorate places great emphasis on individuals in the fishing industry including organized crime syndicates. The Unit is authorized to undertake investigative operations both on a national and international level and is not bound by any area of jurisdiction. The Monitoring and Surveillance Directorate has operational relationships with other law enforcement agencies such as the National Prosecuting Authority, Organized Crime Unit, Asset Forfeiture Unit, South African Revenue Services, South African National Defence Force, South African National Parks, and South African Police Services, as well as improving ties with regional and international law enforcement agencies.

⁸⁶Information in this section was obtained from the South African Department of Agriculture, Forestry and Fisheries website www.daff.gov.za.

The Directorate for Fisheries Protection Vessels has been operational in the South African EEZ since 2005. Three of the four vessels patrol the inshore waters, while the fourth one patrols the high seas and the remote reaches of the South African EEZ. The FPVs conduct fisheries inspections at sea, from as far as the border of Orange River, in the Atlantic Ocean, extending to the Indian Ocean to as far as the Mozambican Border. The Directorate conducts joint patrols with SADC countries. This Directorate operates an intricate vessel monitoring system that has been operational since 2000.

4.1.8 Tanzania

Fisheries in Tanzania contribute 1.3 per cent of the national GDP, and they provide 347,166 metric tonnes (MT) in 2010. This total comprises 52, 683 MT from the marine sector. Both artisanal fisheries and industrial fisheries are represented. Fish contributes to 27 per cent of the total animal protein consumption and about 2.9 per cent to the GDP in the country.⁸⁷ Since 1998 to date, the Government of Tanzania has been licensing foreign purse seines and longline vessels, including EU and Japan under private licenses to fish in its EEZ. The main IUU fishing problems in Tanzania include dynamite fishing, coral mining along the coast, and incursions of non-licensed Asian and European tuna fleets into the Tanzanian EEZ.

The Fisheries Act No. 22 of 2003, an Amendment of the Fisheries Act No. 6 of 1970 is the main legislation for fisheries management which provides for the power of the Minister of Livestock and Fisheries Development to impose conditions relating to traditional fishing, registration and licensing of fishing vessels, of fish, area and season closures, prohibition of fishing in designated areas, monitoring capacity of the fishing fleet, landing of fish, and trade in fish. Part IX of the Act also lays down fisheries offences and corresponding penalties. The Act similarly provides for the creation of a Surveillance Unit with the officers having powers to board and inspect fishing vessels, direct the master of fishing vessels to stop fishing, inspect documents and direct vessels to come to port or a landing station. Such officers have the power to board and inspect vessels, enter premises, and seize or remove fish with or without a warrant. Specific regulations have also been adopted in Tanzania on fishing marine reserves, use of explosives, poisons and water pollution, vessel licensing, and fish quality. In addition, a Beach Management Unit was also established to implement a co-management approach to fisheries management and enforcement.

MCS operations are carried out by the Ministry of Livestock and Fisheries Development through the Directorate of Fisheries Resource Protection. A similar authority of the Revolutionary government of Zanzibar deals with fisheries within the jurisdiction of the islands. The Deep Sea Fishing Authority in Zanzibar is responsible for all MCS activities towards the pelagic (mainly tuna) fishery.

Fisheries management jurisdiction is split between the mainland and Zanzibar. In Zanzibar, the Ministry of Agriculture, Livestock and Natural Resources cover the fisheries sector. There are 26 patrol vessels and 4x4 vehicles that are available for use in freshwater and near coastal MCS.⁸⁸ The Deep Sea Fishing Authority operates a monitoring centre which has an operational VMS; however in general the government has limited means to conduct at-sea inspections or investigations. MCS is carried out by 175 people, with 45 dedicated inspectors, 50 observers for the inland and coastal fishery, and 82 people in administrative roles.⁸⁹

⁸⁷FAO, *Fishery Country Profile, National Fishery Sector Overview, United Republic of Tanzania (FAO, 2007)* ftp://ftp.fao.org/FI/DOCUMENT/fcp/en/FI_CP_TZ.pdf

⁸⁸IOC, *Implementation of a Regional Fisheries Strategy for the ESA-IO*, p. 44.

⁸⁹*Ibid.*

4.2 Trends in Domestic Framework for MCS in Fisheries: Institutional and Practical Challenges

The lack of an effective legal framework is recognized as an impediment to a fully functional MCS. Although IUU fishing can be addressed by implementing individual flag, coastal, port and market measures, a more comprehensive MCS framework will provide increased benefits to States. Overall East African States have in place basic legal framework for the adoption of an MCS strategy or program. This legal framework, primarily through national fisheries laws and regulations provide for fisheries management and conservation measures, licensing of vessels and fishing activities, duties and responsibilities of fisheries authorities, enforcement powers, and fisheries offences and appropriate sanctions. One of the main gaps in most East African State fisheries legislation is the development of specific regulations that would detail the implementation of MCS tools, which include vessel registration and licensing, VMS, observer program, boarding and inspection, port State measures, catch certification and other measures.

Amongst the East African states included in this project, South Africa has the most comprehensive legal framework for fisheries in general, and MCS in particular. This is supported by a fully operational MCS unit which takes into account monitoring and compliance of individual commercial fisheries, surveillance operations, including VMS, and at sea inspection and patrols as well as other key MCS tools, such as observer programs, port inspection, and monitoring of trade to ensure that only those which have been obtained through legal means enter the market. Only South Africa conducts MCS activities that address illegal activities perpetrated by organised criminal groups. Other East African States such as Madagascar, Mozambique, Mauritius and Seychelles have relatively updated legislation on fisheries with specific regulations detailing some MCS measures; however such regulations do not fully implement all global and regional requirements examined in Parts 2 and 3 of this Technical Report. Kenya and Tanzania have more basic MCS fisheries framework in place and very little regulations and evidence of implementation, although Kenya has adopted an MCS strategy and plan. However the strength of these countries' legislation lies in the adoption of participatory approach to management which may also be used to develop measures that would encourage self-compliance amongst fishers in the absence of other MCS tools. Comoros has the weakest legal framework on and implementation of MCS.

Amongst the global and regional requirements for MCS, the most well adopted measures amongst East African States are vessel registration and licensing, VMS, and boarding and inspection. These States have also adopted regulations for the implementation of these measures. There are a number of countries with observer programs, although the extent, purpose and coverage of such are not clear. On the other hand, most East African States had very few provisions in their legislation on port State measures and catch certification. In terms of operational capacity, South Africa, Seychelles and Mauritius have the strongest MCS operations in the region while Kenya, Madagascar and Tanzania as having partial to weak capacity. Comoros has the weakest MCS capacity.

A number of other challenges are confronted by East African States in developing and implementing MCS systems. MCS requires a legal framework that would take into account each of the elements of monitoring, control and surveillance. MCS strategy and planning should address the nature of a country's fishery, priority issues and IUU fishing and availability of assets. Such framework requires a risk assessment strategy and adequate resources that often take a longer process to develop or attain. Most of the East African States have limited capacity to develop a robust MCS system on their own and confront issues of lack of financial and human capacity. The international legal

framework for fisheries is also a complex inter-relationship of ocean, fisheries, environment, trade, labour, and maritime security binding and non-binding instruments whose application may require in-depth analysis through workshops and training of technical officers implementing MCS measures. The legal implications of arresting and prosecuting foreign fishing vessels using MCS tools such as VMS, observer program, port State measures need further understanding at the national level. Within fisheries administrations, MCS competes for resources with other functions such as fisheries research or fisheries management. The use of information collected from MCS tools are also not used effectively in prosecution of fisheries offenders.

The gaps in domestic framework on MCS for fisheries, as well as institutional and practical challenges raise a number of opportunities for cooperation amongst East African States, particularly in terms of utilizing existing regional arrangements and initiatives discussed in Part 3, and assistance provided by international organisations such as the FAO in developing a robust legal framework, sharing of fisheries enforcement data, and conducting joint patrols. East African States which have more updated laws and sound MCS strategies may also serve as model framework for those requiring revision of fisheries laws. Table 4 presents the SWOT analysis for the domestic MCS framework of East African States.

Part 4 Recommendations

Review and update domestic fisheries legislation to ensure compliance with global and regional obligations

Develop harmonized national MCS strategies and plans with long-, medium- and short-term objectives consistent with relevant legislation and policies and regional objectives, particularly the Policy Framework and Reform Strategy for Fisheries and Aquaculture in Africa

Include a risk assessment framework within national MCS strategies and plans

Adopt sound regulations on vessel registration and licensing, VMS, observer program, boarding and inspection, port State measures, catch certification and other MCS measures

Implement an effective penalty system for fisheries offences which will deprive those that benefit from IUU fishing

Incorporate provisions in legislation allowing cooperation with neighbouring States on MCS matters

Ensure that an MCS system are supported by a compliance and enforcement mechanism

Use participatory management, including co-management and community based management, as an approach to fisheries compliance, particularly in terms of data submission and incident reporting

Establish formal collaborative arrangements between institutions with fisheries-related functions which will facilitate sharing of relevant information

Conduct legal and technical training to improve human capacity in MCS implementation

Table 5: Analysis of Strengths, Weaknesses, Opportunities, and Threats in East African State MCS for Fisheries

East African State	Strengths	Weaknesses	Opportunities	Threats/Challenges
Comoros	<p>Has an MCS Centre in place which provides an overall operational framework</p> <p>Has a licensing system for industrial vessels, which provides for administrative sanctions in case of breach of licensing conditions</p> <p>A pilot project on VMS existing</p> <p>Regional support has been available</p> <p>Member of relevant regional organisations and participates in regional initiatives relating to fisheries</p>	<p>Very limited MCS tools or measures in place</p> <p>No specific MCS regulations</p> <p>Fishing logbook system not adequate to ensure effective reporting system</p> <p>VMS may not be operational due to technical difficulties</p> <p>Policy and legal framework needs updating</p> <p>No designated fisheries port</p> <p>Powers of authorized officers to be clearly defined</p>	<p>Although MCS in Comoros may be considered weak, a general framework is existing which may be strengthened by adopting additional institutional measures</p> <p>Existing licensing system for industrial vessels may be adapted for artisanal vessels</p> <p>Improvement in the technical aspect of implementing an observer program</p> <p>Limited MCS personnel capacity can be enhanced by more focused training and development program</p> <p>Can benefit strongly from sub-regional MCS cooperation, particularly in improving data collection and joint enforcement</p>	<p>Fisheries is mainly artisanal; hence MCS measures applied to industrial vessels may be inappropriate</p> <p>Has limited resources compared to other East African States</p>
Kenya	<p>Implementation of a participatory approach to fisheries management</p> <p>A marine fisheries MCS strategy and action plan has been developed</p>	<p>No detailed regulations adopted on MCS measures</p> <p>Observer program has not been successful because of larger presence of artisanal fishery and small size of vessels</p> <p>VMS procurement is in process</p>	<p>Participatory management can be used to promote compliance amongst fisher-folks in the absence of MCS technology</p> <p>The MCS strategy can be further developed into specific actions that can be implemented in the short, medium and long-term</p>	<p>Focus in fisheries is mainly inland, hence marine fisheries has not been given priority</p> <p>Effective implementation of an MCS strategy is a long term process which requires adequate financial support</p>

East African State	Strengths	Weaknesses	Opportunities	Threats/Challenges
			<p>Regulations can be improved to ensure adequate vessel control and stricter application of penalties</p> <p>Synergy between fishing vessel registration and licensing authorities can be developed</p> <p>An observer program should be established; however where this is not practical, stronger legislative provisions are needed to ensure that quality data is reported by vessels</p> <p>Administrative sanctions may be reviewed to support effective implementation of fisheries regulations</p> <p>Planning towards a more focused training and capacity building</p>	<p>Ratification of Port State Measures Agreement required before any focused coordination or collaboration between relevant agencies can occur. Concrete steps need to be taken to achieve this end, such as raising awareness of higher political authorities and implementing agencies, followed by training and procurement</p>
Madagascar	<p>MCS system in place with specific measures implemented such as VMS, observer program, data collection, at sea monitoring, port State measures, and catch certification</p> <p>MCS is funded through the EU Fisheries Partnership Agreement</p> <p>Applies both criminal and administrative sanctions in fisheries</p>	<p>MCS system has limited application to shrimp and tuna fisheries</p> <p>Limited financial resources and capacity to implement new technologies in surveillance</p>	<p>MCS measures can be adapted for artisanal or traditional fisheries through a participatory community based system</p> <p>Coordination between relevant agencies can be enhanced by establishing clear procedures, such as between the fisheries and transport ministries</p> <p>Powers of authorized officers, port inspectors and observers can be defined</p>	<p>Sustainability of the MCS program may be threatened when the country no longer receives contributions from the EU FPA</p> <p>Financial capacity to secure new systems for detecting fishing incursions in the EEZ</p>

East African State	Strengths	Weaknesses	Opportunities	Threats/Challenges
			<p>At sea monitoring can be improved by establishing random inspections and check points</p> <p>Regional observer program for large pelagic fisheries can be better coordinated</p> <p>Exploring possibilities of using new technology in fisheries monitoring, such as RADARSAT</p> <p>Capacity building for fisheries personnel can be strengthened</p>	
Mauritius	<p>Existence of a fisheries legislation with specific regulations in place detailing fisheries management measures and fisheries offences</p> <p>Specific regulations on VMS</p>	No specific regulations on other MCS measures such as port State measures, catch certification, observer program and boarding and inspection	Development of further MCS regulations to provide sufficient legal backing to the MCS system	Threats of IUU fishing from foreign vessels can be high if not addressed successfully through an effective MCS. This can affect the development of the tuna industry
Mozambique	<p>Has a comprehensive legal framework for fisheries that contains management and conservation measures, fisheries offences, and MCS and enforcement</p> <p>Licensing regime not only for industrial but also artisanal vessels</p> <p>Has port State measures comparable to those required under relevant international agreements</p>	Some MCS regulations are not as detailed as provided in global and regional instruments	A solid national MCS framework can provide the basis for developing more specific regulations and activities necessary to effectively implement the system	Sustainability of MCS program without overseas aid

East African State	Strengths	Weaknesses	Opportunities	Threats/Challenges
Seychelles	<p>Has an established legal framework for fisheries that contains management measures, MCS and enforcement</p> <p>MCS legal framework is supported by an operational MCS system</p> <p>Has specific regulations for the control of foreign fishing vessels</p> <p>Regional requirements have been incorporated in domestic fisheries regulations</p>	<p>Some MCS regulations are not as detailed as provided in global and regional instruments</p>	<p>A solid national MCS framework can provide the basis for developing more specific regulations, protocols, and activities necessary to effectively implement the system</p> <p>Other countries in the region can learn from the domestic framework of Seychelles on MCS</p> <p>Continuous training of fisheries officers may assist in further improving MCS implementation</p>	<p>To have an MCS system that is applied in various fisheries of the country</p> <p>To transform national MCS into a model for implementation in the sub-region</p>
South Africa	<p>Has an established legal framework for fisheries that contains management measures, MCS and enforcement</p> <p>The legal framework not only address fisheries management concerns but also fisheries crime</p> <p>MCS framework provides for the implementation of international and regional requirements</p> <p>Has fishery-specific regulations and monitoring and compliance program</p> <p>Clear cooperation mechanisms with other national agencies and international organizations</p>	<p>Consistent review of fisheries allocation measures to ensure equitable allocation of rights in a broad spectrum of commercial fisheries</p> <p>Few weakness in the legal framework compared to other East African States</p>	<p>An established legal framework can assist in developing specific protocols for the implementation of an integrated set of MCS measures across various fisheries (e.g. market data analysis and confidentiality of fisheries data)</p> <p>Specific training for personnel with fisheries-related functions would be beneficial, with initial focus on how to effectively enforce fisheries regulations</p>	<p>Transboundary issues in fisheries may take longer to resolve as it requires strong cooperation amongst States and increased institutional capacity</p> <p>To transform national MCS into a model for implementation in the sub-region</p>

East African State	Strengths	Weaknesses	Opportunities	Threats/Challenges
Tanzania	<p>Has basic legal framework for fisheries that provides for management and conservation measures and some MCS measures, including the powers of authorized officers</p> <p>Has an operational VMS</p> <p>Presence of patrol vessels</p> <p>Establishment of co-management approach through Beach Management Units</p>	<p>No comprehensive regulations on MCS implementation</p> <p>Not all MCS tools are in place such as observer program and effective port State measures, and catch certification</p> <p>Limited means to conduct at sea inspections</p>	<p>The basic legal framework can form the basis for updating fisheries provisions in order to ensure compliance with international and regional obligations</p> <p>Coordination mechanisms can be explored to facilitate effective implementation of related functions such as vessel registration and licensing</p> <p>Opportunity is also ripe for further training and development, particularly on port state measures, data management and collection, prosecution and handling of evidence and MCS tools in general</p> <p>Enhancement of relationship between vessel owners and fisheries authority to improve data collection</p> <p>Engagement between relevant authorities and stakeholders on the need to implement effective port State measures to combat IUU fishing</p>	<p>Development and effective implementation of an MCS strategy is a long term and continuous process and requires adequate funding</p>

5 *Synthesis and Recommendations: Towards a Regional MCS in East Africa*

Global and regional cooperation in MCS present an effective solution to addressing challenges in national MCS systems. Cooperation on MCS is necessary in East Africa because not all of its coastal States are financially able fund their own program. Limited operational assets also hinder States from fully monitoring fishing vessel in their waters, hence cooperation at the sub-regional level may also reduce surveillance cost and help reduce IUU fishing. Exchange of information may also help improve the monitoring of vessel movement and fishing activities in the region. Fish do not know or respect national boundaries, hence management of resources and control of fishing activities may be best done at least at a sub-regional level.

A number of Recommendations were raised in Parts 1 to 4 of this Technical Report based on the MCS requirements established at the global and regional levels, as well as the assessment of domestic legislation and best practice. These Recommendations relate to the identification of priority IUU fishing issues and available MCS tools and assets in the East Africa, implementation of global and regional fisheries obligations, strengthening of sub-regional cooperation, and development of harmonized national framework on MCS. While East African States continue to improve their domestic MCS frameworks, steps may be taken collectively to develop a regional or sub-regional framework for MCS.

In addition to those Recommendations, East African States can develop a sub-regional MCS cooperation in East Africa that would implement existing commitments under regional arrangements and initiatives, in particular the Policy Framework and Reform Strategy for Fisheries and Aquaculture in Africa and could initially focus on the following key elements or activities:

- Development of a model legislation to promote harmonization of laws and regulations;
- Sharing of information, taking into account confidentiality and security of data;
- Financial support for regional or sub-regional MCS; and
- Training and professional development for MCS legal and technical staff.

In obtaining commitment from national governments it should be taken into account that East African States are in various stages of MCS development and have different capacities for implementation. An MCS Centre for East Africa may be considered, which may either be a physical or virtual facility; however due to cost requirements, the use of existing domestic and regional facilities, such as that of SADC may be explored as an alternative option. The decision to establish an MCS Centre solely for East Africa may also depend on whether or not an African Union-wide MCS program and institution will be created.

5.1. Model Legislation on Fisheries and Sample MCS Regulations

East African States may develop a model fisheries legislation based on international fisheries instruments, commitments and obligations under regional agreements and arrangements, and national best practice. This model fisheries legislation will reflect modern fisheries management principles, and incorporate provisions relating to sanctions of sufficient severity, MCS measures, compliance and enforcement. Sample MCS regulations can also developed to help guide States in developing specific measures. Although some of the East African States have recently amended their legislation and adopted MCS-related regulations, this exercise will be most beneficial for those States which require assistance in updating their legal framework and useful for future revision of

fisheries law. The draft legislative framework can contain the following elements:

- Introductory section of a fisheries law;
- Development of fisheries management plans;
- Giving effect to international obligations and regional commitments in fisheries;
- Statutory fishing rights;
- Conservation measures such as marine protected areas;
- Licensing regime for domestic, foreign and high seas fishing, including terms and conditions of a licence;
- Control over national on foreign vessels;
- Record of fishing vessels;
- Vessel entry and exit requirements in coastal State maritime zones;
- Vessel monitoring system;
- Observer program;
- Transshipment;
- Port measures;
- Market related measures;
- Lacey Act type of provisions;
- Implementation of the EU IUU Regulations;
- Enforcement and compliance provisions;
- Bail and bond issues;
- Appointment of authorized officers;
- Fisheries research;
- Institutional framework;
- Offences and prohibited fishing methods;
- Legislative options to combat fisheries crime;
- Administrative penalties; and
- Regulations.

5.2 Regional Sharing of Information

Sharing of information is one of the key areas of cooperation amongst States. A number of arrangements exist in the region for the exchange of information, such as fisheries data available in the FAO database, the listing of IUU vessels by RFMOs, information shared through the International MCS network, activities under the FISH-i and SmartFish, and various reports and studies available on the internet. However for better sharing of information relating to fishing areas, licensing conditions and offences, flagging history, history of IUU fishing, and other information that may lead to the successful prosecution of illegal fishing offenders across jurisdiction, a more formal arrangement to share such information would be necessary. A formal regional or sub-regional arrangement on information sharing can include procedures for access and transfer of data and a network of similar bilateral data access agreements between East African States, and potential data access with relevant organizations outside the sub-region. The formal arrangement should also include guidelines on the types of data to be shared, the authorities responsible for data access and sharing, and provisions for the confidentiality and security of information.

5.3 Financial Support of Regional or Sub-regional MCS

A successful MCS framework at a sub-regional or regional level requires adequate funding which may not be readily available to all East African States. A few options, or a combination of options, for

financial arrangements may therefore be considered:

- National governments fund MCS activities in the region through regular contributions from their own budget;
- Contributions from the local or foreign fishing industry;
- Foreign licensing fees or contributions from FPAs;
- Payment from users of MCS services, such as fishing vessels for the use of VMS;
- Host East African State to pay for the cost of an MCS activity held within their jurisdiction; and
- Overseas aid and sponsor organizations.

National contributions may be calculated based on economic position, size of the fishing fleet availing of the MCS service, and other criteria or formula. MCS-related studies may also be funded through international non-government organizations.

5.4 Training and Professional Development

Training of MCS personnel (legal and technical) is important if an integrated system is to be developed that will allow an effective monitoring of fishing activities, at the same time use of MCS data for the arrest and prosecution of offenders. An MCS training program must promote understanding of the following:

- a practical grounding in the concept of MCS to support sustainable fisheries;
- MCS systems, required elements, implications, and suitability for specific situations;
- legal aspects of technical MCS tools such as VMS and observer programs;
- practical at-sea and port inspections, reporting and prosecution matters, such as detection of violations, prosecution, rules of evidence, some of which are already being conducted in the region; and
- developing an analytical approach to develop appropriate MCS mechanisms.

MCS training can be conducted at the sub-regional level and replicated at the national level.

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