RECREATIONAL AND SPORT FISHERIES IN THE EA, SA & IO REGION

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PREFACE

This report has been prepared to provide a comprehensive understanding of the recreational and sport fishery at national and regional level from an economic, sustainable development and governance perspective. As such, it will allow for objective implementation of applicable interventions to support the development potentials of (a) a sustainable, inclusive and climate-smart marine fisheries in the region, as an alternative sustainable livelihoods, as a source of fishing or non-fishing economic opportunities for fisher communities and to amplify local socio-cultural aspects of small-scale fishing (hedonic values / eco-tourism); and (b) developing recreational and sport fishing as a sustainable growth engine with reference to coastal marine tourism from the local fishing community perspective as mentioned above. A holistic and integrated approach to sustainable, integrated and inclusive fisheries (understanding the positive and negative interactions between the different segments but, all the industries competing in the same geography and governance perspectives.

This report focusing on the following countries: Kenya, Djibouti, Eritrea, Somalia, Sudan, Mozambique, Mauritius (including Rodrigues), Comoros (Grande Comore, Anjouan and Moheli), Seychelles (including Praslin and Silhouette), Tanzania (Zanzibar, Pemba & Mafia islands) provides a detailed analysis of marine recreational and sport fisheries in the EA-SA-IO region in terms of business, performance and governance models and examines the opportunities for development and challenges. The report also examines the impact of sport and recreational fisheries on local fishing communities, national and regional economies, and explores ways in which these fisheries can better serve small-scale and artisanal fisheries as a source of alternative livelihoods, food, economic and socio-cultural security, and contributions to the regional Blue Economy Agenda. Further, the report outlines recommendations for short and long-term interventions, ways to address the challenges outlined by stakeholders; and a visualization of a future of developing sustainable marine and recreational fisheries which are inclusive of all stakeholders.

Gaps in information on recreational and sport fisheries in the EA, SA &IO region have long been a challenge affecting the sustainable development of these fisheries. While some countries such as Kenya, Mozambique, Mauritius and South Africa have a long history of recreational and sport fisheries, particularly for marine game fish species, little to no information has been documented on the ecology of main target species, socio-economic importance, opportunities and challenges in developing the sport and recreational fisheries in the EA, SA & IO region. The inadequate information and understanding of the recreational and sport fishery component undermine the implementation of management measures, impedes their sustainable development and may exacerbate resource user and management conflicts. This report will contribute to regional knowledge, inform ongoing initiatives under the ECOFISH Marine Fisheries Work Plan and amplify national and regional efforts on tapping into the potential of fisheries in the Blue Economy Agenda.
PRÉFACE

Le présent rapport a été préparé pour fournir une compréhension complète de la pêche récréative et sportive aux niveaux national et régional du point de vue économique, du développement durable et de la gouvernance. Alors, il permettra des interventions applicables pour soutenir le potentiel de développement (a) d'une pêche marine durable, inclusive et intelligente face au climat dans la région, comme moyen de subsistance durable alternatif, comme source d'opportunités économiques de pêche ou non pour les communautés de pêcheurs et pour amplifier les aspects socioculturels locaux de la; et b) développer la pêche récréative et sportive en tant que moteur de croissance durable en ce qui concerne le tourisme marin côtier du point de vue de la communauté de pêche locale, comme mentionné ci-dessus. Une approche holistique et intégrée de la pêche durable, intégrée et inclusive (comprendre les interactions positives et négatives entre les différents segments mais, toutes les industries en concurrence dans les mêmes perspectives géographiques et de gouvernance.

Ce rapport, concentre sur les pays suivants: Kenya, Djibouti, Érythrée, Somalie, Soudan, Mozambique, Maurice (y compris Rodrigues), Comores (Grande Comore, Anjouan et Mohéli); Seychelles (y compris Praslin et Silhouette), Tanzanie (îles Zanzibar, Pemba et Mafia) fournit une analyse détaillée de la pêche récréative et sportive marine dans la région EASA-IO en termes de modèles commerciaux, de performance et de gouvernance et examine les opportunités de développement et les défis. Le rapport examine également l'impact de la pêche sportive et récréative sur les communautés de pêcheurs locales, les économies nationales et régionales, et explore les moyens par lesquels ces pêches peuvent mieux servir la pêche artisanale et artisanale en tant que source de moyens de subsistance alternatifs, de sécurité alimentaire, économique et socioculturelle, et de contributions au Programme régional d'économie bleue. En outre, le rapport présente des recommandations pour des interventions à court et à long terme, des moyens de relever les défis décrits par les parties prenantes; et une visualisation d'un avenir de développement durable de la pêche marine et récréative qui soit inclusif de toutes les parties prenantes.

Les lacunes en matière d'information sur les pêches récréatives et sportives dans la région d’EASA-IO constituent depuis longtemps un défi qui affecte le développement durable de ces pêches. Alors que certains pays tels que le Kenya, le Mozambique, Maurice et l'Afrique du Sud ont une longue histoire de pêche récréative et sportive, en particulier pour les espèces de poissons marins, peu ou pas d'informations ont été documentées sur l'écologie des principales espèces cibles, l'importance socio-économique, les opportunités et les défis liés au développement de la pêche sportive et récréative dans la région d'EASA-IO. L'information et la compréhension inadéquates de la composante pêche récréative et
sportive compromettent la mise en œuvre des mesures de gestion, entravent leur développement durable et peuvent exacerber les conflits entre les utilisateurs des ressources et la gestion. Ce rapport contribuera à la connaissance régionale, informera les initiatives en cours dans le cadre du Plan de travail sur la pêche marine et amplifiera les efforts nationaux et régionaux pour exploiter le potentiel de la pêche dans l'Agenda de l'économie bleue.
# ABREVIATIONS AND ACRONYMS

<table>
<thead>
<tr>
<th>Abbreviation</th>
<th>Description</th>
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<tbody>
<tr>
<td>ABF</td>
<td>African Billfish Foundation</td>
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<tr>
<td>APDRA</td>
<td>Association for Fisheries and Rural Development in Africa / Association Pisciculture et Développement Rural en Afrique</td>
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<tr>
<td>BILLFISH-WIO</td>
<td>Billfish Interactions, Livelihoods, and Linkages for Fisheries sustainability in the Western Indian Ocean</td>
</tr>
<tr>
<td>CBD</td>
<td>Aichi Target 11 of the Convention on Biological Diversity</td>
</tr>
<tr>
<td>CBT</td>
<td>Community-based Tourism</td>
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<tr>
<td>CBBT</td>
<td>Community-based boutique tourism</td>
</tr>
<tr>
<td>CITES</td>
<td>Convention on International Trade in Endangered Species</td>
</tr>
<tr>
<td>CNRO</td>
<td>Centre National de Recherches Oceanographiques (National Center for Oceanographic Research)</td>
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<tr>
<td>COVID-19</td>
<td>Coronavirus disease 2019</td>
</tr>
<tr>
<td>DNAP</td>
<td>Directorate of Fisheries Administration</td>
</tr>
<tr>
<td>DPSIR</td>
<td>Drivers, Pressures, State, Impact, and Response</td>
</tr>
<tr>
<td>EA-SA-IO</td>
<td>Eastern and Southern Africa and Western Indian Ocean region</td>
</tr>
<tr>
<td>EASA-IO</td>
<td>Afrique de l’est, Afrique Australe et Ocean Indien</td>
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<tr>
<td>EEZ</td>
<td>Exclusive Economic Zone</td>
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<tr>
<td>FADs</td>
<td>Fishing aggregation devices</td>
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<tr>
<td>FAO</td>
<td>Food and Agricultural Organization</td>
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<tr>
<td>FGDs</td>
<td>Focus Group Discussions</td>
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<tr>
<td>GDP</td>
<td>Gross domestic product</td>
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<tr>
<td>Acronym</td>
<td>Full Form</td>
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<tr>
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<tr>
<td>ICZM</td>
<td>Integrated Coastal Zone Management</td>
</tr>
<tr>
<td>IHSM</td>
<td>Universities especially the Institut Halieutique et des Sciences Marines Université de Toliara</td>
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<tr>
<td>IOC</td>
<td>Indian Ocean Commission</td>
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<td>IGAD</td>
<td>Intergovernmental Authority on Development</td>
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<td>IOTC</td>
<td>Indian Ocean Tuna Commission</td>
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<td>IGFA</td>
<td>International Game Fish Association</td>
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<td>KASA</td>
<td>Kenya Association of Sea Anglers</td>
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<td>KeFS</td>
<td>Kenya Fisheries Service</td>
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<td>KEMFSED</td>
<td>Kenya Marine Fisheries Socioeconomic Development</td>
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<tr>
<td>KMFRI</td>
<td>Kenya Marine and Fisheries Research Institute</td>
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<td>KWS</td>
<td>Kenya Wildlife Service</td>
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<td>MoF</td>
<td>Ministry of Fisheries</td>
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<td>MPA</td>
<td>Marine Protected Areas</td>
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<td>NCSD</td>
<td>National Council for Sustainable Development</td>
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<td>NFP</td>
<td>National Focal Point</td>
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<tr>
<td>NGOs</td>
<td>Non-Governmental Organizations</td>
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<td>NISTI</td>
<td>National Institution for Science, Technology and Innovation</td>
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<td>MFTEP</td>
<td>Ministry of Finance, Trade and Economic Planning</td>
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<td>MIHARI</td>
<td>Madagascar Locally Managed Marine Area Network</td>
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<tr>
<td>PESTEL</td>
<td>Political, Economic, Social, Technological, Legal and Environmental factors</td>
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<td>RF</td>
<td>Recreational Fisheries</td>
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<tr>
<td>Abbreviation</td>
<td>Full Form</td>
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<td>SUMMATRA</td>
<td>Surface and Marine Transport Regulatory Authority</td>
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<td>SFA</td>
<td>Seychelles Fishing Authority</td>
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<td>SIDS</td>
<td>Small Islands and Small Island Developing States</td>
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<tr>
<td>SDG’s</td>
<td>Sustainable Development Agenda 2030</td>
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<td>SSFC</td>
<td>Seychelles Sports Fishing Club</td>
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<tr>
<td>SWOT</td>
<td>Strengths, weaknesses, opportunities, and threats</td>
</tr>
<tr>
<td>ToR</td>
<td>Terms of Reference</td>
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<tr>
<td>TNC</td>
<td>The Nature Conservancy</td>
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<tr>
<td>WIO</td>
<td>Western Indian Ocean</td>
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<tr>
<td>WWF</td>
<td>Worldwide Fund for Nature</td>
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<tr>
<td>UNWTO</td>
<td>World Tourism Organization</td>
</tr>
<tr>
<td>VRIO</td>
<td>Value, Rareness, Imitability, Organization</td>
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ACKNOWLEDGEMENTS

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- All the stakeholders in the sport and recreational fisheries who have voluntarily shared significant information in private and confidentiality making this study a success.

- Mr. William Bland for his comments and revisions on the initial survey and email to sport and recreational stakeholders.

- Ministries of Fisheries, Tourism and Environment in the different countries namely Kenya, Comoros, Mauritius.

- Dr. Gladys Okemwa and Mr Joseph Rondolph Payet, consultants for ECOFISH ornamental fisheries for insightful discussions on the survey instrument and expected outcomes of the assignment.

- Non-Governmental organizations.

- Ms Sarah Ater for her editorial support on the French version of the survey instruments and sections in the technical report.
EXECUTIVE SUMMARY

The study on Recreational and Sport fisheries in the EA, SA &O region was commissioned by the ECOFISH Programme on the “Contribution of Sustainable Fisheries to the Blue Economy of Eastern Africa, Southern Africa and the Indian Ocean region” under the aegis of the Indian Ocean Commision (IOC) and funded by European Union (EU). Its principal objective is to examine a suite of interventions to the “Formulation of regional strategic framework for responsible and sustainable development of recreational and sport fisheries as part of an update on the Regional Marine Fisheries Sub-Sector Strategy for the EA-SA-IO region” (Activity 1.2.1.4). It is a step-forward in providing a detailed situational analysis necessary to build an in-depth understanding of the prospects and challenges, barriers and constraints, lessons and best practices at the national level for integrating judiciously this component into Regional Marine Fisheries Strategy and Business Plan for the EA-SA-IO region.

Marine sport and recreational fisheries are generally less understood and underdeveloped in the ESA-IO region, yet they have potential to contribute to socio-cultural, economic and food security of the region. While countries such as Kenya, Mauritius, South Africa and partly Madagascar and Seychelles are known as tourist destinations for recreational and sport fishing particularly for big game fishing, limited information exists on their development potential, governance and ecological perspective combined with the opportunities for cross-sectoral successful integration of fishing and non-fishing economic activities. In the 1980s and 1990s, countries such as Kenya and Mauritius had flourishing recreational and sport fisheries. However, the fisheries have experienced a decline in the participation rates, percentages of clientele and number and diversities of target fish species. Even with the technological advancement in the types of sport and recreational fishing vessels and gears (outboard vs. inboard engines, lures), a major concern for the stakeholders is the absence of adequate management measures to address competing interests from diverse groups, increasing fishing costs and security issues that hinder the presence of sport and recreational clients. The rapid decline of the fisheries has a negative implication on local economies and the potential for sustainable development of sport and recreational fisheries in the EA-SA-IO region. A business and sustainable development oriented approach backed-up with evidenced-based approaches is required to enhance overall efficiencies in the recreational and sport fisheries while taking into account the governance, ecological and development implications.

The report provides a detailed situational analysis of select countries including Kenya, Tanzania, Djibouti, Eritrea, Somalia, Sudan, Mozambique, Mauritius, Seychelles, Madagascar and Comoros. Information and data presented were collected by secondary and primary surveys of diverse stakeholders to prepare a comprehensive perspective of
each country's (i) business, performance and governance models in relation to marine and recreational fisheries; (ii) current challenges and opportunities for development; (iii) interconnectivity of sport and recreational fisheries to local fishing communities, national and regional economies, (iv) short and long term interventions, as well as ways to address the challenges outlined by stakeholders; (v) and a visualization of a future of developing sustainable marine and recreational fisheries which are inclusive of all stakeholders.

Over 50% of the study respondents revealed that they did not submit their catch data to National Fisheries Institutions (see Annex). Accessibility and availability of data on sport fisheries was limited to few countries among the beneficiary countries - however, individual captains and sport fishing centres showed willingness to share data and information. Operations in the recreational and sport fishery comprise of community groups (Fishery Cooperative), companies (with Shareholders), family businesses (involves more than one family member) and Individual - sole traders (see Annex). Majority of the study respondents noted that compliance to international obligations, national laws and legal frameworks was minimal in relation to sport and recreational fisheries (see annex), even though most countries surveyed have legal frameworks governing fisheries resource use.

Overcapacity and overfishing was of general concern in several countries that have active sport and recreational fisheries especially in overlapping fishing grounds. With the prospects to develop these fisheries, the challenge lies in the ability of the national fisheries institutions and stakeholders to derive ways of sustainable resource sharing and management which would mitigate further decline of commonly targeted species as noted in places such as Kenya, Tanzania, and Mozambique. The study also reveals that most sport and recreational fisheries in countries where they are developed were characterized by exclusive operations that were limited to specific target groups and clientele such as in the case of Tanzania, Mozambique, Kenya and to some extent Madagascar and Mauritius. Countries that have non-existent or underdeveloped sport and recreational fisheries have the potential to develop these fisheries while considering the specific lessons and experiences from the region. The Kenya operational model provides a starting point to rethink and re-image inclusive sport fisheries that are climate-smart and sustainable in the ESA-IO region. There are lessons to be learned particularly in re-imagining and implementing sport and recreational fisheries at national level where efforts and investment is required in creating awareness, intensifying the marketing to diverse clientele, ensuring safety of operators and tourists and determining fair cost of fishing and related profit returns for these fisheries to be successful.

Borrowing a leaf from Kenya’s historical prominence as a sport fishing destination, the presence of the iconic billfish species combined with a comprehensive fishing experience put the country on the map. The study also noted a similar trend in Mauritius,
Mozambique and partly Tanzania. However, long term participants in the recreational and sport fisheries in the various countries have observed a drastic decline in the ability to attract clientele and provide adequate fishing experiences partly due to the less likelihood of catching the highly sought-after game species as a result of declining fish stocks. To responsibility and sustainability build this fishery, countries will need to look beyond the development needs and consider the ecosystem sustainability to provide long term poverty alleviation, food, nutrition, socio-economic and cultural security in tandem with addressing the implications of climate change and rapidly declining marine biodiversity.

The heterogeneity of countries in the WIO combined with the complexity and uniqueness of sport and recreational fisheries calls for a multi-faceted approach to their sustainable development and management. Put simply, the interventions are not a blanket solution and every country will need to address the challenges and opportunities while drawing from the regional collaboration and experiences of the sport fishing captains and crews. The study revealed that a high proportion of the active participants in the recreational and sport fishing industries are highly experienced and with a wealth of knowledge about the changes in the fishery and what would be needed to sustain the sport and recreational fisheries in the ESA-IO region. The study also revealed that these fisheries contribute in multiple ways to the local economies, yet the socio-economic and cultural impact of these fisheries remains largely undocumented.

The study has concluded and recommended the following:

- **Responsible and sustainable sport and recreational fisheries:**
  - There is a potential risk of overfishing due to multiple fishing groups competing in the same fishing grounds, especially areas with active recreational and sport fisheries. There is an urgent need for countries to undertake a situational analysis of fishing grounds and groups to examine overlaps and determine shared resource management;
  - The commonly targeted species in recreational and sport fisheries are under intense pressure from an increasingly large number of multiple users. Based on the study, game fish species, for instance, have declined over the years.
  - To address this challenge, it is recommended that national fisheries institutions implement adequate and effective regulatory framework to monitor and implement the fisheries regulations in their respective countries.

- **Importance of sport and recreational fisheries:**
  - Sport fishing is still underdeveloped in some countries, but with a great potential of sustainable development, job creation and supporting socio-
economic and cultural security. Given these prospects, a strategy for promotion of the sport and recreational fishing activities would be relevant particularly in the current discourse on the significance of the Blue Economy for ESA-IO countries.

- A socio-economic analysis of sport and recreational fisheries value chain and significance in the ESA-IO region is critical for implementing sustainable development objectives.

**Awareness and Education:**

- While sport and recreational fishing has historical prominence in some countries in the ESA-IO region, the fishery remains unknown to the general public. It is recommended that countries and associated sport fishing entities need to:
  - Launch an awareness campaign at local and national level to sensitize the public on the importance of sport and recreational fisheries;
  - Create awareness and education to integrate knowledge about these fisheries into the curriculum.
  - Development and training on fishing techniques for communities to diversify fishing opportunities.

**Integrating sport and recreational fisheries in business models:**

- To develop a new concept of integrating sport fisheries infrastructure into current development plans. For example, establishing sport fishing marinas, boatyards and moorings at strategic locations to promote investment, tourism and local involvement. The new concept will bring together local coastal fishing communities and the public to diversify economic opportunities.

**Information Data collection and management:**

- Sport and recreational fisheries contribute important information to IOTC’s efforts in managing tuna and tuna like species. It is envisioned that the data collection from sport fisheries will support IOTC efforts in understanding the stock structure. Recognizing the efforts by IOTC to intensify country reporting and compliance, national fisheries institutions should maintain the reporting of information from sport and recreational fisheries.
  - Majority of the sport and recreational fisheries in the ESA-IO do not submit fisheries data and information which in turn hinders the development of interventions for sustainable use. In 2016-2017, IOTC implemented a regional standardized data collection method and database for recreational fisheries and piloted in four countries (Kenya, Seychelles, Mauritius and La Reunion). There is a need to work with national fisheries institutions, sport
fishing clubs and individual boats and captains to evaluate the existing and previous databases to improve reporting from these fisheries.

- Sport fishing captains and crew in most ESA-IO countries have voluntarily reported tagging information for key game fish species such as marlin and sailfish for several decades. These data have continued to play a significant role in understanding some of the pelagic fish species in the region. Voluntary data collection and tagging should be encouraged and sensitized at national and regional level to support information gathering.

- Given the limited information and data, a pilot project to empower all stakeholders in this fishery is necessary to ensure voluntary data reporting and compliance, co-management and conservation.

**Regional Cooperation:**

- Sport and recreational fisheries are heterogeneous and travel across multiple jurisdictions. Similarly, the common targeted species such as billfish and tuna are trans boundary. Regional cooperation in sustainable development and management of sport and recreational fisheries is paramount in promoting best practises, sharing of lessons and experiences, and developing collaborative national and regional frameworks. Further, regional cooperation among the ESA-IO countries would be a catalyst to develop sport and recreational fisheries given that fisheries and blue economy are a key priority sectors for these countries.

Sport and recreational fisheries attract a multitude of national, regional and international entities. An integrated approach will be critical to determine the resources, expertise and investment opportunities to address the recommendations and contribute to the goal of “Sustainable Fisheries to the Blue Economy of Eastern Africa, Southern Africa and the Indian Ocean region.”
RÉSUMÉ ANALYTIQUE (FRANÇAIS)

Un projet a été développé dans le cadre général de l’activité 1.2.1.4 du Plan de travail sur la pêche marine de l’ECOFISH dans le cadre de l’objectif “formuler une stratégie et un plan d’affaires durables, intégrés et inclusifs pour la réhabilitation et la modernisation de la pêche artisanale marine pour la région EASA-IO”. Le présent rapport a été préparé pour fournir une compréhension complète de la pêche récréative et sportive aux niveaux national et régional du point de vue économique, du développement durable et de la gouvernance. En tant que tel, il permettra la mise en œuvre objective des interventions applicables pour soutenir le potentiel de développement (a) d’une pêche marine durable, inclusive et intelligente face au climat dans la région, comme moyen de subsistance durable alternatif, comme source d’opportunités économiques de pêche ou non pour les communautés de pêcheurs et pour amplifier les aspects socioculturels locaux de la; et b) développer la pêche récréative et sportive en tant que moteur de croissance durable en ce qui concerne le tourisme marin côtier du point de vue de la communauté de pêche locale, comme mentionné ci-dessus. Une approche holistique et intégrée de la pêche durable, intégrée et inclusive (comprendre les interactions positives et négatives entre les différents segments mais, toutes les industries en concurrence dans les mêmes perspectives géographiques et de gouvernance.

Ce rapport, axé sur les pays suivants: Kenya, Djibouti, Érythrée, Somalie, Soudan, Mozambique, Maurice (y compris Rodrigues), Comores (Grande Comore, Anjouan et Mohéli); Seychelles (y compris Praslin et Silhouette), Tanzanie (îles Zanzibar, Pemba et Mafia) fournit une analyse détaillée de la pêche récréative et sportive marine dans la région d’EASA-IO en termes de modèles commerciaux, de performance et de gouvernance et examine les opportunités de développement et les défis. Le rapport examine également l’impact de la pêche sportive et récréative sur les communautés de pêcheurs locales, les économies nationales et régionales, et explore les moyens par lesquels ces pêches peuvent mieux servir la pêche artisanale et artisanale en tant que source de moyens de subsistance alternatifs, de sécurité alimentaire, économique et socioculturelle, et de contributions au Programme régional d’économie bleue. En outre, le rapport présente des recommandations pour des interventions à court et à long terme, des moyens de relever les défis décrits par les parties prenantes; et une visualisation d’un avenir de développement durable de la pêche marine et récréative qui soit inclusive de toutes les parties prenantes.

principal est d'examiner une série d'interventions menant à la "Formulation d'un cadre stratégique régional pour le développement responsable et durable des pêches récréatives et sportives dans le cadre d'une mise à jour de la Stratégie régionale du Sous-Secteur des pêches maritimes pour la région EASA-IO" (Activité 1.2.3). Il s'agit d'un pas en avant dans la fourniture d'une analyse situationnelle détaillée nécessaire pour acquérir une compréhension approfondie des perspectives et des défis, des obstacles et des contraintes, des leçons et des pratiques exemplaires au niveau national pour intégrer judicieusement cette composante dans la Stratégie régionale de pêche maritime et le Plan d'activités pour la région EA-SA-IO.

La pêche sportive et récréative marine est généralement moins comprise et sous-développée dans la région de l'EASA-IO, mais elle a le potentiel de contribuer à la sécurité socioculturelle, économique et alimentaire de la région. Bien que des pays tels que le Kenya, Maurice, l'Afrique du Sud et en partie Madagascar et les Seychelles soient connus comme des destinations touristiques pour la pêche récréative et sportive, en particulier pour la pêche au gros, il existe peu d'informations sur leur potentiel de développement, leur gouvernance et leur perspective écologique combinés aux possibilités d'intégration réussie intersectorielle des activités économiques de pêche et non halieutiques. Dans les années 1980 et 1990, des pays comme le Kenya et Maurice ont connu une pêche récréative et sportive florissante. Cependant, les pêches ont connu une baisse des taux de participation, des pourcentages de clientèle et du nombre et de la diversité des espèces de poissons cibles. Même avec les progrès technologiques dans les types de navires et d'engins de pêche sportive et récréative (moteurs hors-bord par rapport aux moteurs intérieurs, leurres), une préoccupation majeure pour les intervenants est l'absence de mesures de gestion adéquates pour répondre aux intérêts concurrents de divers groupes, l'augmentation des coûts de pêche et les problèmes de sécurité qui entравent la présence de clients sportifs et récréatifs. Le déclin rapide de la pêche a une incidence négative sur les économies locales et le potentiel de développement durable de la pêche sportive et récréative dans la région d'EASA-IO. Une approche axée sur les entreprises et le développement durable, appuyée sur des approches fondées sur des données probantes, est nécessaire pour améliorer l'efficacité globale des pêches récréatives et sportives tout en tenant compte des implications en matière de gouvernance, d'écologie et de développement.

Le rapport fournit une analyse détaillée de la situation de certains pays, notamment le Kenya, la Tanzanie, Djibouti, l'Érythrée, la Somalie, le Soudan, le Mozambique, Maurice, les Seychelles, Madagascar et les Comores. Les informations et les données présentées ont été recueillies par des enquêtes secondaires et primaires auprès de diverses parties prenantes afin de préparer une perspective globale des modèles d'affaires, de performance et de gouvernance de chaque pays en ce qui concerne la pêche marine et...
récréative; ii) défis actuels et opportunités de développement; (iii) l'interconnectivité des pêches sportives et récréatives avec les communautés de pêcheurs locaux, les économies nationales et régionales, (iv) les interventions à court et à long terme, ainsi que les moyens de relever les défis décrits par les parties prenantes; (v) et une visualisation d’un avenir de développement durable des pêches marines et récréatives qui soient inclusives de toutes les parties prenantes.

Plus de 50% des répondants à l'étude ont indiqué qu’ils n’avaient pas soumis leurs données de capture aux Institutions nationales de pêche. L'accessibilité et la disponibilité des données sur la pêche sportive étaient limitées à quelques pays parmi les pays bénéficiaires - cependant, les capitaines individuels et les centres de pêche sportive se sont montrés disposés à partager des données et des informations. La surcapacité et la surpêche étaient une préoccupation générale dans plusieurs pays qui pratiquent une pêche sportive et récréative active, en particulier dans les zones de pêche qui se chevauchent. Avec les perspectives de développement de ces pêches, le défi réside dans la capacité des institutions nationales de pêche et des parties prenantes à trouver des moyens de partage et de gestion durables des ressources qui atténueraient le déclin des espèces couramment ciblées, comme indiqué dans des endroits tels que le Kenya, la Tanzanie et le Mozambique. L'étude révèle également que la plupart des pêcheries sportives et récréatives dans les pays où elles sont développées étaient caractérisées par des opérations exclusives qui étaient limitées à des groupes cibles et à une clientèle spécifiques, comme dans le cas de la Tanzanie, du Mozambique, du Kenya et, dans une certaine mesure, de Madagascar et de Maurice. Les pays qui ont des pêcheries sportives et récréatives inexistantes ou sous-développées ont le potentiel de développer ces pêcheries tout en tenant compte des enseignements et des expériences spécifiques de la région. Le modèle opérationnel du Kenya fournit un point de départ pour repenser et redessiner les pêcheries sportives inclusives, intelligentes face au climat et durables dans la région de l'EASA-IO. Il y a des leçons à tirer, en particulier en repensant et en mettant en œuvre la pêche sportive et récréative au niveau national, où des efforts et des investissements sont nécessaires pour sensibiliser, intensifier la commercialisation auprès de diverses clientèles, assurer la sécurité des opérateurs et des touristes et déterminer le coût équitable de la pêche et les bénéfices connexes pour que ces pêcheries soient couronnées de succès.

Empruntant une feuille à la proéminence historique du Kenya en tant que destination de pêche sportive, la présence de l’espèce emblématique billfish combinée à une expérience de pêche complète a mis le pays sur la carte. L'étude a également noté une tendance similaire à Maurice, au Mozambique et en partie en Tanzanie. Cependant, les participants à long terme à la pêche récréative et sportive dans les différents pays ont observé une baisse drastique de la capacité d'attirer la clientèle et de fournir des expériences de pêche.
adéquates en partie en raison de la probabilité moindre de capturer les espèces de gibier très recherchées en raison de la diminution des stocks de poissons. Pour développer cette pêche de manière responsable et durable, les pays devront aller au-delà des besoins de développement et envisager la durabilité de l’écosystème pour assurer la réduction de la pauvreté à long terme, l'alimentation, la nutrition, la sécurité socio-économique et culturelle tout en s'attaquant aux implications du changement climatique et du déclin rapide de la biodiversité marine.

L'hétérogénéité des pays du WIO combinée à la complexité et au caractère unique de la pêche sportive et récréative appelle une approche multidimensionnelle de leur développement et de leur gestion durables. En termes simples, les interventions ne constituent pas une solution globale et chaque pays devra relever les défis et saisir les opportunités tout en tirant parti de la collaboration régionale et de l'expérience des capitaines et des équipages de pêche sportive. L'étude a révélé qu'une forte proportion des participants actifs dans les industries de la pêche récréative et sportive sont très expérimentés et possèdent une richesse de connaissances sur les changements dans la pêche et ce qui serait nécessaire pour soutenir la pêche sportive et récréative dans la région de l'EASA-IO. L'étude a également révélé que ces pêcheries contribuent de multiples façons aux économies locales, mais l'impact socio-économique et culturel de ces pêcheries reste largement non documenté.

L'étude a conclu et recommandé ce qui suit:

- **Pêche sportive et récréative responsable et durable:**
  - Il existe un risque potentiel de surpêche en raison de la concurrence de plusieurs groupes de pêche dans les mêmes zones de pêche, en particulier dans les zones de pêche récréative et sportive active. Il est urgent que les pays entreprennent une analyse de la situation des zones de pêche et des groupes de pêche afin d'examiner les chevauchements et de déterminer la gestion partagée des ressources;
    - Les espèces couramment ciblées dans les pêches récréatives et sportives subissent une pression intense de la part d'un nombre croissant d'utilisateurs multiples. D'après l'étude, les espèces de poissons gibier, par exemple, ont diminué au fil des ans.
    - Pour relever ce défi, il est recommandé que les institutions nationales de pêche mettent en œuvre un cadre réglementaire adéquat et efficace pour surveiller et mettre en œuvre la réglementation de la pêche dans leurs pays respectifs.

- **Importance de la pêche sportive et récréative:**
La pêche sportive est encore sous-développée dans certains pays, mais elle offre un grand potentiel de développement durable, de création d'emplois et de soutien à la sécurité socio-économique et culturelle. Compte tenu de ces perspectives, une stratégie de promotion des activités de pêche sportive et récréative serait particulièrement pertinente dans le discours actuel sur l'importance de l'économie bleue pour les pays de l'EASA-IO.

- Une analyse socio-économique de la chaîne de valeur et de l'importance de la pêche sportive et récréative dans la région de l'EASA-IO est essentielle à la mise en œuvre des objectifs de développement durable.

### Sensibilisation et éducation:

- Bien que la pêche sportive et récréative ait une importance historique dans certains pays de la région EASA-IO, la pêche reste inconnue du grand public. Il est recommandé aux pays et aux entités de pêche sportive associées de:
  - Lancer une campagne de sensibilisation au niveau local et national pour sensibiliser le public à l'importance de la pêche sportive et récréative;
  - Sensibiliser et éduquer pour intégrer les connaissances sur ces pêches dans le programme d'études.
  - Développement et formation sur les techniques de pêche pour les communautés afin de diversifier les possibilités de pêche.

### Intégrer la pêche sportive et récréative dans les modèles d'affaires:

- Développer un nouveau concept d'intégration de l'infrastructure de la pêche sportive dans les plans de développement actuels. Par exemple, l'établissement de ports de plaisance, de chantiers navals et d'amarres de pêche sportive à des endroits stratégiques pour promouvoir l'investissement, le tourisme et la participation locale. Le nouveau concept réunira les communautés locales de pêcheurs côtiers et le public afin de diversifier les possibilités économiques.

### Collecte et gestion des données d'information:

- La pêche sportive et récréative apporte des renseignements importants aux efforts de la CTOI en matière de gestion du thon et des espèces apparentées. Il est prévu que la collecte de données sur la pêche sportive soutiendra les efforts de la CTOI pour comprendre la structure des stocks. Reconnaissant les efforts déployés par la CTOI pour intensifier l'établissement de rapports et le respect par les pays, les institutions nationales de la pêche devraient maintenir la communication des informations relatives à la pêche sportive et récréative.
La majorité des pêcheries sportives et récréatives de l'EASA-IO ne soumettent pas de données et d'informations sur la pêche, ce qui entrave le développement d'interventions en vue d'une utilisation durable. En 2016-2017, la CTOI a mis en œuvre une méthode régionale normalisée de collecte de données et une base de données pour la pêche récréative et a été mise à l'essai dans quatre pays (Kenya, Seychelles, Maurice et La Réunion). Il est nécessaire de travailler avec les institutions nationales de pêche, les clubs de pêche sportive et les différents bateaux et capitaines pour évaluer les bases de données existantes et antérieures afin d'améliorer les rapports sur ces pêches.

Les capitaines et les membres d'équipage de pêche sportive de la plupart des pays de l'EASA-IO ont volontairement signalé des informations de marquage pour des espèces de poissons de chasse clés telles que le marlin et le voilier depuis plusieurs décennies. Ces données ont continué de jouer un rôle important dans la compréhension de certaines espèces de poissons pélagiques dans la région. La collecte volontaire de données et le marquage devraient être encouragés et sensibilisés aux niveaux national et régional pour soutenir la collecte d'informations.

Compte tenu des informations et des données limitées, un projet pilote visant à habiliter toutes les parties prenantes de cette pêche est nécessaire pour assurer la déclaration volontaire des données et la conformité, la cogestion et la conservation.

**Coopération régionale:**

- Les pêches sportives et récréatives sont hétérogènes et traversent de multiples juridictions. De même, les espèces ciblées communes telles que le poisson-bec et le thon sont transfrontières. La coopération régionale en matière de développement durable et de gestion des pêches sportives et récréatives est primordiale pour promouvoir les meilleures pratiques, partager les enseignements et les expériences et élaborer des cadres nationaux et régionaux de collaboration. En outre, la coopération régionale entre les pays de l'EASA-IO serait un catalyseur pour développer la pêche sportive et récréative étant donné que la pêche et l'économie bleue sont des secteurs prioritaires clés pour ces pays.

La pêche sportive et récréative attire une multitude d'entités nationales, régionales et internationales. Une approche intégrée sera essentielle pour déterminer les ressources, l'expertise et les opportunités d'investissement pour donner suite aux recommandations et contribuer à l'objectif de "Pêche durable pour l'économie bleue de l'Afrique de l'Est, de l'Afrique Australe et de la région de l'océan Indien"
1.0 INTRODUCTION

Within the broader framework of the IOC ECOFISH Marine Fisheries Workplan (Formulation of Regional Framework for the responsible and sustainable development of recreational and sport fisheries as part of an update on the Regional Marine Fisheries Sector Strategy for the ESA-IO region) (Activity 1.2.3), this report has been prepared to assist partner countries, regional bodies and development partners to better understand sport and recreational fisheries from an economic, governance and sustainable development perspective to advance the operational capacities of national and regional fisheries whilst emphasizing on the potential of these fisheries to drive socio-economic, cultural and ecological benefits for a sustainable, inclusive and climate-smart marine fisheries in the region. Further, recreational and sport fisheries present an opportunity to work towards long-term poverty alleviation, food, nutrition, socio-economic and cultural security in tandem with addressing the implications of climate change and rapidly declining marine biodiversity.

1.1 GLOBAL RECREATIONAL FISHERIES

Recreational fishing, also referred to as sport fishing, is defined by FAO as “fishing of aquatic animals (mainly fish) that do not constitute the individual’s primary resource to meet basic nutritional needs and are not generally sold or otherwise traded on export, domestic or black market”. Sportfishing includes the use of hooks, fishing rods, or reels, just like any other method of fishing and occurs in different formats and forms depending on the types of fish, techniques and specialization (location (freshwater vs. saltwater); orientation of the catch (harvest all to total catch and release); gear choice (handlining to long-distance motorized boat fishing with modern technology, from organic bait to artificial baits), type of fishing (bottom, float, casting, trawling, fly fishing) and destination (resident fishing close to home in urban ponds or small lakes to long-distance angling fishing tourism).

The FAO Technical Guideline for Responsible Fisheries focusing on Recreational Fisheries in the Global Context emphasizes the potential benefits of recreational fisheries and their importance in ecological biodiversity and conserving endangered species and ecosystems. It is estimated that about 700 million people might be engaged in some form of recreational fishing, i.e. several millions of jobs worldwide (Alinghaus et al., 2019; World Banks, 2012)). The sport and recreational fisheries contribute a significant opportunity cost to the small-scale fisheries is the sport diving, hotel, the angling and boating industry, which is globally worth billions of dollars each year. Estimates of participation levels in highly developed countries suggest that 1 in 10 people fish for leisure, which
amounts to at least 220 million recreational fishers (Alinghaus et al., 2019; Teh and Sumaila, 2013; World Banks, 2012). Globally, recreational anglers spend approximately 190 million US dollars annually, which amounts to approximately 70 billion US dollars yearly in gross domestic product (World Bank, 2012). Although these examples provide opportunities for substantial socio-economic benefits of the sport and recreational fishing sector, such information is generally lacking in the EA-SA and IO region, with exception of South Africa.

Recreational fishing has conventions, rules, licensing restrictions and laws that limit the way in which fish may be caught. The International Game Fish Association (IGFA) makes and oversees a set of voluntary guidelines to promote responsible sportsmanship across the world. Typically, these prohibit the use of nets and the catching of fish with hooks not in the mouth. Enforceable regulations are put in place by governments to ensure sustainable practice amongst anglers. In addition to capturing fish for food, recreational anglers may also keep a log of fish caught and submit trophy-sized fish to independent record keeping bodies.

1.2 OVERVIEW OF RECREATIONAL AND SPORT FISHERIES IN THE ESA-IO

In the ESA-IO region, the definition of recreational and sport fisheries in the WIO varies by country because of the different gears and levels of participation with catches characterized by high species diversity (Kadagi et al, 2021). For example, in La Reunion recreational fishing also termed as sportfishing may involve sale of catch, whereas in Kenya, recreational fishing involves catching fish for a purpose of consumption or leisure without sale (Kadagi et al., 2021; Pepperrell et al., 2017). Several studies note that the sport and RF have a social, economic and cultural significance across the WIO and other regional countries (Kadagi et al., 2021; Lompart, 2012; Mann, 2000, Brouwer and Buxton 2002; Pradervand, 2004, Everett & Fennessy 2007; Howard & Starcke II, 1975; Williams, 1970). However, few studies have examined the significance and implications of this fishery to the local economies and the sustainable fisheries development discourse.

The study is expected to provide information about the recreational and sport fisheries to tap into the development potentials (a) of sustainable, inclusive and climate-smart marine fisheries in the region. Showcase alternative sustainable livelihoods, economic opportunities of fisher community perspectives, non-fishing economic activities, highlight local cultural aspects of small-scale fishing (hedonic values / eco-tourism associated with these fisheries.

(b) explore the development potential of recreational and sport fishing as a sustainable growth engine with reference to coastal marine tourism from the local fishing community
perspective as mentioned above. A holistic and integrated approach to sustainable, integrated and inclusive fisheries which will bring about an understanding of the positive and negative interactions between the different segments and the linkages with all the other associated industries competing in the same geographical space.

The WIOfish database estimates that marine recreational fisheries account for about 14% of the fisheries sectors in the Western Indian Ocean (WIO) including artisanal (also referred to as subsistence, traditional or small-scale) and commercial (Van der Elst et al., 2009, Everett et al. 2015; 2017). Generally, recreational fisheries are associated with the coastal and eco-tourism industry. While this systemic sector is quite advanced in some countries of the region namely, Seychelles, Mauritius, Madagascar, Kenya and part South Africa, it is still nascent or inexistent in the others. Recent studies in the Western Indian Ocean and across the East African coastline have highlighted the lack of adequate information and data to assess recreational and sport fisheries despite their prominence in various countries (Kadagi et al., 2021). Reliable data and stock assessments are required from which effective management measures can be developed and implemented. Evidence suggests that sport and recreational fishing may potentially have a significant impact on the Indian Ocean tunas and billfish stocks; however, there is unreliable data in countries where the activity is undertaken.

The challenge further hinders the ability to determine the socio-economic, ecological and cultural implications of these fisheries in the local, national and regional context. There is a need to identify and address the socio-cultural, economic, ecological and governance issues associated with the sport and recreational fisheries sector. Not only will this improve the understanding of sport and recreational fisheries, but it will also guide managers, policy makers and developers on how these fisheries may be responsibly and sustainably developed and managed in the Blue Economy Framework.

The consultants have developed a clear road-map to facilitate the process of developing a multidisciplinary and multi-faceted approach to improve the understanding of these fisheries, explore sustainable opportunities, and strengthen policy making, management and governance of these fisheries in the region.

1.3 GOAL AND OBJECTIVES OF THE STUDY

This study is conducted under the “Contribution of Sustainable Fisheries to the Blue Economy of Eastern Africa, Southern Africa and the Indian Ocean region (ES-SA-IO)” under the aegis of the IOC and funded by the EU. The study builds upon the overall objective of the ECOFISH programme “to enhance equitable economic growth by promoting sustainable fisheries in the EA-SA-10 region” in order to contribute to poverty alleviation, food and nutrition security while addressing climate change resilience and enhancing marine biodiversity. Specifically, the goal is to map and understand the
institutional and socio-cultural appendage and economic dimensions of the recreational or sport fishery activities to contribute to improving the livelihoods of fishing communities and development of sustainable and inclusive fisheries in the EA-SA and IO region. The prospects of a comprehensive understanding of the gaps in information, opportunities and challenges complement the ongoing efforts by countries in the EA-SA and IO region to sustainably harness the potential of the Blue Economy in line with African Union’s Agenda 2063 of the “Africa We Want”.

Recognizing the importance of developing a comprehensive understanding of the recreational and sport fisheries in the region, the study will cover four key objectives as follows:

1. Promote responsible and sustainable recreational fisheries as a non-negligible contributor to the maritime fisheries sector.
2. Explore the existing and potential business development models for promoting responsible alternative sustainable livelihoods and economic opportunities for the coastal fishing communities.
3. Explore the prospects for improving the economic conditions of the local fishers and their communities through diversification from traditional fishing activities.
4. Explore the potential for complementary and/or alternative sustainable livelihood and economic opportunities for the fishing communities that can also contribute to reducing overfishing and unsustainable fishing practices in the local fisheries.

This mission falls specifically under the IOC ECOFISH Marine Fisheries Workplan related to Activity 1.2.2 on the formulation of a Regional Framework for the responsible and sustainable development of recreational and sport fisheries as part of an update on the Regional Marine Fisheries Sector Strategy for the ESA-IO region. The aim of the sport and recreational study is to gain an in-depth understanding of the recreational and sport fisheries from a governance, economic, ecological and development perspective, as well as the positive and negative interactions among the different sectors to ensure a comprehensive and integrative approach for the sustainable and inclusive management of the sector. This study also examines the challenges and socio-ecological implications of the recreational and/or sport fishery component which are by far less understood in the ESA-IO region.

Overall, the study provides recommendations and action plans to advance the sustainable development of recreational and sport fisheries which are aimed at improving the economic conditions of the local fishers and their communities. The study also outlines possible short and long-term interventions which take into account the prospects of sport and recreational fisheries as a complementary and/or alternative sustainable livelihood and economic opportunities for the fishing communities that can contribute to reducing overfishing and unsustainable fishing practices in the local fisheries. The study concludes
that developing sustainable sport and recreational fisheries will require a collaborative approach that is inclusive of all stakeholders and incorporates sustainable management of the coastal fisheries and conservation of biodiversity in alignment with the Blue Economy agenda. Specifically, main target species for sport and recreational fisheries in many of the ESA-IO countries based on the study findings have declined and thus identifying and creating economic activities and opportunities for local fishing communities urgently requires awareness and understanding of the threats to the ecological diversity which are critical in building a holistic and integrated Regional Marine Fisheries Strategy and Business Plan for the EA-SA-IO region.
2.0 WORKPLAN AND IMPLEMENTATION

This is the first comprehensive study on recreational and sport fisheries in the ESA-IO region is being attempted focusing on several countries: Kenya, Tanzania, Djibouti, Eritrea, Somalia, Sudan, Mozambique, Mauritius, Seychelles, Madagascar and Comoros.

The assignment was carried out by a team of two Key Experts, under the direction and support of Mr. Satish Hanoomanjee and Dr. Soobaschand Sweenarain.

The team consisted of:

Dr. Nelly Kadagi, Team Leader I (Kenya, Tanzania, Djibouti, Eritrea, Somalia, Sudan, Mozambique) – Fisheries Expert

Dr. Nina Wambiji, Team Leader II (Comoros, Mauritius, Seychelles and Madagascar) – Fisheries Expert

Manuel Gomez, Project Officer, DT-Global. The overall responsibility for the project lies with Dr. Soobaschand Sweenarain and Mr. Satish Hanoomanjee, IOC ECOFISH Programme.

In line with the study objectives, the assignment included the followings main activities:

- To perform a comprehensive situational analysis of the recreational fishery in the coastal ACP countries of the EA-SA-IO region, including inter alia the existing national or sub-national policy, institutional and governance frameworks.
- To survey the different recreational fishing activities and their interactions with the coastal marine fisheries, tourism and environmental conservation sectors from a cross-sector perspective.
- To review the existing fisheries and socio-economic data of the recreational fishing activities, including the target fish stocks and provide expert advice on the development potentials for responsible and sustainable in the segments as complementary and/or alternative economic activities to the local fishing communities.
- To assess the availability and quality of the catch and socio-economic data to contribute to designing future data collection tools and techniques, including sampling and surveys.
- Identify existing and potential recreational and eco-tourism activities that showcase the successful, sustainable potential for diversification opportunities of interest to artisanal fishing communities.
- To describe briefly the operational structures or business models of the recreational or eco-tourism activities, including lessons learnt and best practices that have contributed to their success.
● To identify key stakeholders and champions in the public and private sector as well as the Non-Governmental Organisations who are pushing for sustainable, inclusive coastal fisheries recreational fisheries and eco-tourism and environmental stewardship at the local and national levels.

● To provide estimates the direct and indirect socio-economic impacts of recreational fishing activities in the local and national economies

● To provide recommendations and Way forward to harness the socio-ecological opportunities for the sustainable development of recreational and eco-tourism activities with the involvement of the local fishing communities.

● To provide recommendations for awareness-building and policy guidance for promoting responsible and sustainable development recreational fisheries as a pathway for creating alternative livelihoods and economic opportunities for local fishing communities at the national and regional levels.
3.0 REPORT STRUCTURE AND DELIVERY

In line with the ToR made at the initial briefing meeting, the comments on the inception report and findings from the stakeholders, the following layout was proposed for the final report. To amplify the significance of this study, the report provides a section with an in-depth analysis of the countries based on the thematic areas suggested for the expected results. Further, we have added a section with the preface and executive summary in both English and French and other important information in the annexes.

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4.0 Results
4.1 Ecological impacts
4.2 Economic impacts
4.3 Social impacts
4.4 Management and legal aspects of the fishery
4.5 Challenges and opportunities for development
5.0 Conclusions and recommendations
6.0 Annexes
8.1 Survey instrument
8.2 Organizations contacted and persons interviewed
7.0 References
4.0 METHODOLOGY AND APPROACHES

To build on the evidence for this study, a systemic approach was adopted to gather qualitative and quantitative data. A combination of methods were used to ensure that data gathering and analysis would deliver qualitative evidence-based situational analysis. To ensure that findings are verified in support of conclusions and recommendations, research design for the study included:

- A review of project documents, grey literature, government and non-governmental reports and peer reviewed literature through a desktop based study.
- Virtual Interviews and Focus Group Discussions (FGDs) with relevant stakeholders, National Focal Points and the Key Informants (interviews and FGDs were carried out virtually with the project consultants. The consultants developed a collaborative survey instrument (in English and French) which covered several key areas. The information and analysis were then triangulated against the documentary evidence to ensure appropriate inclusion of views, suggestions, information and experiences. A participatory approach was adopted to verify the information obtained.
- Online surveys (in English and French) for the main thematic areas were also administered to target groups (e.g. catch and socio-economic data, viability of recreational fisheries)
- Post workshop consultation

The online surveys were primarily conducted to gain a holistic understanding of the recreational and sport fisheries which included the following components:

- History and current extent of the sport/recreational fisheries
- Areas of operations
- The significance and contributions of recreational fisheries to livelihoods + National Economy
- Planned actions to integrate the fishery in socio-economic development
- Challenges and recommendations
- Fisheries acts or rules and regulations in the country with regards to governance
- The value chain
- The interactions with other fisheries
- Extent and types of Marine Protected Areas in the country and their jurisdictions
• **Key issues**

• **Heterogeneity of countries in the ESA-IO region**

  The countries selected for this mission have differences in the socio-economic, cultural, fishing sectors, governance, legal and policy framework, technical level and development in terms of sport and recreational fisheries.

  Our approach: The experts having knowledge of the region and work rapport with different stakeholders made it possible to avoid generalization. The experts reached out to different stakeholders and ensured specificity in the requested information and level of engagement.

• **Identification of respondents and Key Informants**

  The heterogeneity and diversity of the countries required the experts to deploy different avenues in order to identify respondents for collecting primary data as well as obtaining secondary data or references for other respondents.

  Our approach: Having worked on various projects in the region, particularly on recreational fisheries, it was possible to identify respondents and reach out to Key Informants for reconnaissance surveys, references and interviews. Additionally, the IOC-ECOFISH program provided contacts of National Focal Points, national and regional organizations. The contacts played significantly in connecting with the respondents and key Informants. The expert also targeted key sport fishing centres, individuals and businesses and crews in most of the target countries.

• **Linkages to other ongoing programmes and activities in the ESA-IO**

  Recreational and sport fisheries remain understudied and understood in the ESA-IO - little to no information exists in some areas. It was important for the present study to incorporate both historical and present perspectives to obtain a comprehensive understanding whilst taking into consideration the ongoing work:

  Our approach: The consultants coordinated with other ongoing activities in the regions such as:

  • There are currently two regional projects fussing on sport fisheries and the commonly targeted billfish species: Billfish Interactions, Livelihoods, and Linkages for Fisheries sustainability in the Western Indian Ocean (BILLFISH-WIO), funded by WIOOMSA and Strengthening data collection and capacity building for effective conservation and management of billfish in the Western Indian Ocean region,
funded by Pew Charitable Trusts - both projects are led by Drs. Nelly Isigi Kadagi and Nina Wambiji. It is envisaged that the results and outcomes will contribute to the much needed data and knowledge and advance awareness of not only sport and recreational fisheries, but also the interconnectedness of these fisheries with other resource users and their importance in the socio-ecological and economic framework.

- Both projects span across several countries in the Western Indian Ocean (WIO) region - and were significant in providing contacts of sport fishing captains and crews in various countries.
  - The National Fisheries Institutions (eg. Kenya, Comoros, Mauritius) expressed interest in the project outcomes.
  - The Indian Ocean Tuna Commission (IOTC) provided guidance on contact persons and sources of available data reported by countries.
  - Several hotel and restaurant owners, sport fishing captains and individual anglers expressed interest in the project outcomes and actions for sustainable development and management.

- **COVID19 implications**

The likelihood of delay in communications and transfer of information was high as a result of COVID-19 implications - where some officers and respondents had to work away from their offices. This meant that the delivery of requested information was slow and in some cases unsuccessful.

Our approach: The experts relied on diverse methods to gather and collate data. Other than key persons, the consultants utilized various databases, grey literature and periodic reports. Notably, conducting a validation exercise with various countries will be critical in fact-checking to ensure that the information represents the true picture of recreational and sport fisheries.

- **Visibility, Communication and Collaboration**

It took the consultancy team approximately two months to build the visibility of the study throughout the various networks in order to gather data and fuel collaborations. A study of this breadth and importance should have prior visibility before the start of the meeting. While the IOC ECOFISH team had communicated with diverse stakeholders to introduce the experts and the goal of the study, it was noted that a study on recreational and sport fisheries in ESA-IO had niche specificity. Therefore, the experts relied on in-country and
regional contacts, particularly sport fishing captains for references as well as representatives of governmental and non-governmental institutions.

For the coastal and island states, the implications of overfishing and increasing multiple fisheries resource user groups cannot be overlooked, particularly in countries such as Kenya, Mauritius and Tanzania which have had a history of sport fishing for highly sought after species such as billfish. It was noted that billfish numbers have declined in most “hotspots” and especially species such as sailfish which for a long-time were considered the “bread and butter” for sport fishing in Kenya and other places. Similarly, in Mozambique, the size and numbers of blue marlin had declined in prominent places such as the Bazaruto Island. Hence the majority of the sport fishing business and associated enterprises had closed down or relocated to other areas that seemed to be thriving. The present status poses a huge challenge in the thinking around sustainable development of recreational and sport fisheries to secure the socio-economic, cultural and food and nutritional needs of communities.

**4.1 SPECIFIC ACTIVITIES**

To date, the consultants have conducted several virtual meetings to fine tune the methodology, collect data and collate information. The meetings involved working with experts and Key Informants to gather information, develop a list of contacts for interviewing and administering surveys and revise the data mining and gathering approaches.

The consultants also employed a multidisciplinary approach to address the aim, objectives, and scope of the study which included;

a) familiarizing with National Focal Points, Key Informants and partner organizations through virtual platforms (e.g., Zoom/Webinar, emails and WhatsApp). Note: The consultants have already held a reconnaissance virtual meeting with the National IOC-ECOFISH Representative of Comoros to test the survey instrument and estimate the time required to conduct virtual meetings;

b) Data collection and mining – Specific to each country, desktop review based on the proposed outline for country context include examining peer-reviewed and grey literature, assessing recreational fishing websites and social media platforms, and available databases from government and non-governmental organizations;

c) Several virtual conversations and interviews were held with relevant stakeholders to determine the status of recreational fishing activities, identify local recreational fishing activities and related sectors such as tourism;

d) Analysis and description of the recreational fisheries activities catch and landings data, socio-economic performance, and opportunities for sustainable development using
Drivers, Pressures, State, Impact, and Response (DPSIR) - A survey instrument has been developed focusing on the following areas (See the deliverables section for survey instrument);

e) Situation analysis were conducted by employing four tools: the strengths, weaknesses, opportunities, and threats (SWOT), Political, Economic, Social, Technological, Legal and Environmental factors (PESTEL) Value, Rareness, Imitability, Organization (VRIO) analysis and the Ansoff Matrix. The SWOT analysis allowed us to examine the power, limitations and associated risks hence developing a structured approach for the identification, assessment, and management of unforeseen threats identified in the SWOT analysis through development of a Risk Management Strategy (RMS). The PESTEL analysis will build upon the factors identified by the different beneficiaries and their strategic implications and responses to the recreational fisheries. A VRIO Analysis will be used to understand the economics of the fishery and potential economic influence. It normally evaluates the resources of a particular entity in this case being the beneficiary country and the recreational fisheries fraternity or the Ansoff Matrix, also referred to as the Product/Market Expansion Grid.

4.2 COMPREHENSIVE AND COLLABORATIVE APPROACH

This study is a critical starting point for the formulation of a framework for the sustainable development and management of sport and recreational fisheries in the ESA-IO region (refer to section 1.2 and 2.0 for Goal, objectives of the study and activities). Specifically, the intention of this study is not to provide a “one-size fits all” perspective on the historical and current dynamics, challenges and potential for these fisheries, but rather open up discussion at national and regional level to explore (i) approaches for responsible and sustainable fisheries as a contributor to economies, (ii) determine existing business development models for promoting recreational and sport fisheries as an alternative for diversifying livelihoods of fishing communities and (iv) build synergies to determine interventions to reduce the overfishing and unsustainable fishing practices not only for commonly targeted game fish species, but also the ecosystem at large. This study has focused on five important areas namely; ecological, economic and social impacts, management, legal and governance aspects, and challenges and opportunities for sustainable development. Despite the limitations in obtaining information and data for some countries, the comprehensive overview amplifies the need to integrate sport and recreational fisheries in the regional discourse on developing a sustainable blue economy for ESA-IO countries.
### 4.3 DELIVERY AS PER TERMS OF REFERENCE

Table 1. List of the proposed activities to achieve the study goal and objectives

<table>
<thead>
<tr>
<th>Proposed activities</th>
<th>Inputs</th>
<th>Outputs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Conducted a virtual planning meeting to commence the discussion on the content of draft inception report, thematic areas and activities for specified countries in the EA-SA-IO region</td>
<td>Expert time, Internet/communication support</td>
<td>Draft inception report, Draft Table of Contents, Draft methodology (Research design and data collection)</td>
</tr>
<tr>
<td>Held a virtual meeting with National Focal Points (NFP) and key contact persons to design strategies for data collection and mining plus drafting of country reports</td>
<td>Expert time</td>
<td>Draft Inception report (with preliminary details of country profile and gaps), Draft Table of Content and Outline of thematic areas as indicated in Annex 7.1</td>
</tr>
<tr>
<td>Held virtual meetings, WhatsApp conversation and email communication with stakeholders on thematic areas as outlined in Annex</td>
<td>Expert time, NFP and Key Informant time, Internet access</td>
<td>SWOT analysis – on current status, challenges and opportunities for recreational fisheries, DPSIR (Drivers, Pressures, State, Impact, and Response) model report, Responses to survey instrument (Annex 7.1)</td>
</tr>
<tr>
<td>Had consultative virtual meeting with key informants on the following areas:</td>
<td>Expert time, NFP and Key Informant time, Internet access</td>
<td>Draft national report of thematic areas, Literature review, Data and information for each country</td>
</tr>
<tr>
<td>Successful and unsuccessful case studies of recreational fisheries;</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Interactions between recreational fisheries and other sectors and implications on the environment;</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Direct and indirect costs and revenues accrued by recreational</td>
<td></td>
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</tr>
</tbody>
</table>
fisheries at local and national level based on available data;
Sustainable business models for developing recreational fisheries specific for each country;
Models for increasing the involvement of local communities and small-scale fisheries in recreational fisheries.

<table>
<thead>
<tr>
<th>Event Description</th>
<th>Expert Time Required</th>
<th>Deliverables</th>
</tr>
</thead>
<tbody>
<tr>
<td>Technical meeting that reviewed the National Reports on thematic areas and commenced on writing the regional draft report</td>
<td>Expert time, NFP and Key Informant time, Internet access</td>
<td>Zero draft of regional report</td>
</tr>
<tr>
<td>Held virtual meeting to finalize on National reports</td>
<td>Expert time, NFP and Key Informant time, Internet access</td>
<td>Completed National Reports</td>
</tr>
<tr>
<td>National Expert to consolidate regional first draft report</td>
<td>Lead Expert time</td>
<td>First consolidated regional draft</td>
</tr>
<tr>
<td>Virtual regional validation meeting</td>
<td>Expert time, NFP and Key Informant time, Internet access</td>
<td>Feedback from IPMU, National Experts and virtual meeting</td>
</tr>
<tr>
<td>Revision of the regional draft report after comments from after receiving and integrating feedbacks from the IPMU, National experts and inputs from the virtual regional validation meeting</td>
<td>Lead Expert time</td>
<td>Final report</td>
</tr>
<tr>
<td>PowerPoint presentation of main findings of the regional report</td>
<td>Lead Expert time</td>
<td>Presentation slides</td>
</tr>
<tr>
<td>Final outputs</td>
<td>Lead Expert time</td>
<td>Final Report plus other deliverables</td>
</tr>
</tbody>
</table>
5.0 OVERVIEW OF THE RECREATIONAL AND SPORT FISHERIES SUB SECTOR BY COUNTRY

The study targeted the beneficiary countries including Kenya, Tanzania, Djibouti, Eritrea, Somalia, Sudan, Mozambique, Mauritius, Seychelles, Madagascar and Comoros. The consultants facilitated the process of evaluating the recreational and sport fisheries in the following key thematic areas: ecological, economic, social, technological, management and governance, legal frameworks, opportunities, challenges and recommendations (see Annexes). The consultants also took into consideration the maritime façade of the EA-SA-IO region which is promoted as a regional block for economic cooperation in fisheries and fisheries-related sectors by the ECOFISH Programme. The ECOFISH Programme has in time collaborated with other EU projects that promote ocean governance, marine conservation and all aspects of maritime security. Recently the countries have invested heavily in the Blue Economy agenda which is drawing from the opportunities laid down for economic development at sea hence capacity has to be built for effective maritime governance to fully and sustainable benefit from the ocean resources (Bueger, et al, 2020).

Below, an overview of each study country profile and findings are presented.

5.1 KENYA

5.1.1 Historical and current status of recreational and sport fisheries sector

Kenya’s history of marine recreational fishing dates to the 1950s (Kadagi et al., 2021; Williams, 1970, Pepperrell et al. 2017). The fishery consists of private and charter sportfishing boats that operate for an average of between 96 and 120 trips per year and may vary among charter sportfishing operators ranging from 75 -180 days (Kadagi et al., 2021; Pepperrell et al. 2017). About 40 -60 charter sportfishing boats currently operate along the Kenya coast, with a few other private boats. The sizes of boats range from 5 -12 meters long and are medium-high mechanized.

The main target species include billfish, belonging to the Istiophoridae and Xiiphidae family, and tuna (Scombridae). Other medium and large pelagic species include barracuda, wahoo, sharks and Spanish mackerel among others. Recreational fishing
centers are mostly concentrated in Watamu, Malindi, Kilifi, Diani, Shimoni and Mombasa (Abuodha 1999; Ndegwa 2010), with coordinated annual tournaments and competitions conducted in Malindi, Watamu and Diani. In addition, Malindi and Watamu are known as one of the top billfish destinations on the East of Africa and as one of the few game fishing destinations where an angler has a likelihood of catching a ‘Fantasy slam’ (that is five different billfish) as evidence by first record of fantasy slam in 2005 and two other fantasy slams in 2009 (Kadagi et al., 2021).

Since the mid 1980’s, the sport fishing community has practiced catch and release culture for mainly billfish which followed with the establishment of the African Billfish Foundation (ABF) in the late 1980s. The ABF is a private organization that has operated a large pelagic fish tagging program for over 30 years. The ABF mainly collects data on billfish that are tagged and released as well as reported recaptures across the East African Indian Ocean waters, although other species such as giant trevally, sharks and rays are tagged. Over 60,000 fish have been tagged to date, with close to 3000 tag recoveries mostly from artisanal fisheries across the East Africa coastal waters (Kadagi et al., 2020; Harris et al., 2013; Kadagi et al., 2011).

5.1.2 Recreational fishing activities and their interactions with the coastal marine fisheries, tourism and environmental conservation sectors from a cross-sector perspective

Majority of the participation in recreational and sport has often been restricted to the affluent and perceived as a European and North American people’s pastime. The demographics of most participants, for example, boat captains and anglers, are predominantly white with very few local black people owning sport fishing boats. In recent years, there has been an influx of locally-owned small boats, specifically “dinghies” which conduct opportunistic sport fishing particularly during the high fishing (Kadagi et al., 2021; 2020).

Notably, sport and recreational fisheries interaction within fishing grounds with other fishing groups (artisanal and commercial). Between the 70s and early 2000s, Kenya’s prominence as a billfish destination led to the growth of angling tourism which attracted several high profile tournaments throughout the year and resulted in creation of economic opportunities. For example, various hotels and resorts along the Kenya coast (e.g., Hemingways, Ocean Sports) have been known for bringing together the camaraderie and competiveness of sport fishing with several tournaments and competitions held throughout the fishing season. Relatedly, the growth of the catch, tag and release culture catalyzed the evolution of best-practices in game fish, particularly for billfish species
where captains and crews focused on proper fish handling techniques to ensure survival of game fish species and reduce mortality due to catch and release.

5.1.3 Existing fisheries and socio-economic data of the recreational fishing activities, including the target fish stocks

Recreational and sport fishing landings have declined in recent years from about 138 tons in 2013 to 18 tons in the year 2014 (Ndegwa, 2015). The decrease in landings is possibly as a result of a reduction in tourism in the main sport fishing centers of Watamu and Malindi in the past 5 years. International travel advisories in response to the state of security such as terrorist attacks have a direct effect on tourism and recreational fishing (NIK and NW pers. communication). A decrease in recreational landings in relation to the number of international tourists and negative international publicity has also been reported in previous years. For example, the decrease in the number of international tourists from 863,400 in 1994 to 690,500 in 1995 corresponded to a drop in the number of recreational landings from 14,295 (fishing season 1994/95) to 11,536 (fishing season 1995/96) (Abuodha, 1997). The decline in landings of commonly targeted sport fishing species is also concurrent with our survey of recreational and sport fishing stakeholders which demonstrated that the population was declining and depleted in places such as Watamu, Malindi and Lamu. Further, the mean size and abundance of common species has experienced over 50% change with most species being caught in small sizes.

The survey also revealed that the recreational and sport fishing activities have been impacted by overfishing, excessive discards of tons of bycatch, pollution and the use of destructive fishing gears resulting in substantial contribution to loss of biological diversity and overall fishery decline. Market failure has also contributed to the fishery problem. This is because the environmental and social costs of fishing are high combined with a lack of sport fishing clientele which also means that the cost of fishing is higher than the profit returns for boats that operate as charter fishing. This has led to a reduction in the number of participants and over-capacity in cases where cheap fishing trips supplement the higher average costs, which is related to the challenge of fully exploiting the commonly targeted species. Consequently, several sport fishing charter operations have closed their businesses or moved to other fishing areas in recent years as a result of decreased international tourist numbers (pers. communication).

5.1.4 Estimates the direct and indirect socio-economic impacts of recreational fishing activities in the local and national economies

Both documented and undocumented evidence suggest that the fishery has had a positive direct and indirect socio-economic impact in the local and national economies with the emergence and development of sport and recreational fishing related outfits ENTERPRISES
stretching from the 80s to late 2000s (i.e., hotels and resort, business (boating and fishing equipment and gears industries), and job opportunities. However, much of these activities have presently diminished - due to a combination of several factors (e.g., the reduction in the number of spot fishing clients, COVID-19 implications, travel restrictions, decline in main target species, change in technology, and influx of other fishing groups resulting in competition).

There is also tension and, sometimes, conflict between the artisanal and the commercial sub-sectors of the fishing industry, which is exacerbated by a lack of clear policy guidance on their relative importance and management of shared resources.

The contributions of sport and recreational fishing to the economy may appear small if the quantity of fish landed is the only variable considered for inclusion in the calculation of national product. However, if value addition at the various benefits to the economy are considered such as in hotel fees, safaris (Kenya offers a comprehensive package where one can fish as well as travel to terrestrial wildlife parks and reserve), job opportunities for hotel staff and fishing crews, licensing fees, transportation charges via airlines and ground transfer, great and equipment, boat maintenance and in restaurants, then the contribution of sport fisheries to the Gross domestic product (GDP) is fairly significant.

A recent study revealed a combination of artisanal and recreational fishing for billfish which indicated that each group benefited from targeting this species (Kadagi et al., 2020). It is not surprising therefore that our survey of stakeholders indicated that sport fisheries contributed an average of 20-40% to the local economy with much of the clientele (larger than 60%) comprising international and regional anglers.

### 5.1.5 Existing national or subnational policy, institutional and governance frameworks

Sport fishing charter and private boats are required to obtain several licenses such as a fishing license issued by the Kenya Fisheries Service (KeFS) and a tourist license from the Ministry of Tourism for charter sport fishing operators. A maritime inspection license may be required for large boats. If boats are docked within the Marine Park and reserve areas, mooring fees are paid to the Kenya Wildlife Service (KWS). Private sport fishing boats are also required to obtain a fishing license.

Various policies and regulations have been used to manage the open access nature of fisheries in Kenya. These include interventions aimed at regulating the number of participants in the fishery, for example through licensing, fishing or spatial location of fishing activity (MPAs vs. fishing grounds; fishing or harvesting technology and size.
Kenya has also devolved management of fisheries to local levels or county governments which continues to create a sense of involvement and ownership, as well as the involvement of communities in fisheries management.

5.1.6 Operational structures or business models of the recreational or eco-tourism activities

Several operational structures for sport and recreational fishing and related activities exist in Kenya. For instance, most of the sport fishing charter or private boats are privately owned, whereby the boat owner may be the captain/skipper or rent the boat. Some of the sport fishing boats are owned by touristic hotels or business entities (e.g. Hemingways Resort in Watamu or Mombasa Water sports) which caters for different types of clientele searching for a sportfishing experience). Some boats are family-run businesses or for-leisure which attract private anglers during high fishing season (which is between November and March and occurs concurrently with the marlin and sailfish runs). Places such as Watamu have also seen a rise in the number of small boats “dinghies” operated by local fishers who switch between small-scale commercial and recreational fishing. This is particularly during the months when they are more likely to catch game fish species as well as sell less priced guided fishing tours. As noted in the surveys, the increased pressure from the artisanal fishery with increased mechanisation has seen an increase in the number of boats. Areas that were formerly not targeted are now heavily targeted without the capacity to manage that pressure.

It is important to note that Kenya’s sport fishing industry provides a unique case study for lessons learnt and best practices given its prominence from the 1950s and despite the decline especially in recent years. Sport fishing requires adequate investment into the latest technologically advanced boats, gears, fish finding equipment and other techniques and materials. In the 1980s, stretching up to the 1990s and 2000s, the sport fishing community through the Kenya Association of Sea Anglers (KASA), an umbrella organization bringing together all the captains and crews, had invested heavily in publicity along with associated business entities. In addition, the sport fishing community introduced and advanced the catch, tag and release which encouraged responsible sportsmanship. There are several lessons to be learned from Kenya’s prominence in sport fishing as follows:

a) There is a need for coordinated efforts in developing a sustainable and inclusive sport and recreational fishery. This includes efforts for national fisheries institutions to (i) implement the regulatory fisheries framework stipulated in their fisheries act to monitor activities of commercial, industrial and artisanal fishing; and streamline licensing procedures for sport and recreational fisheries.
b) It is necessary to regulate the cost of fishing (the study noted that increasing maintenance costs for sport and recreational fishing boats along with other infrastructure such as storage); the cost of boats and fishing gears is also high and therefore there is an opportunity for the local industry to produce lines, hooks and safety equipment.

c) Sustainable and inclusive development of these fisheries may be hindered by the lack of skilled crew; thus it is necessary to establish synergies for the transfer of knowledge and skills, and promote intergenerational sharing of experience and expertise. As noted in our study, recreational and sport fishers in most of the ESA-IO countries (Kenya, Mauritius, Seychelles and Mozambique) have been fishing for several years. There is a need to tap into these expertise and promote exchange of knowledge.

d) Sportfishing is closely linked to tourism and therefore requires adequate and effective promotion both nationally and internationally. For over four decades (since the 70s and 80s and until the late 2000s, Kenya was promoted as a ‘hotspot’ fishing destination - gaining a lot of attention from tour operators. To develop a functional and business oriented sport and recreational fishery, corporate sponsorship will be required to support fishing competitions and tournaments which have contributed to promoting responsible sportsmanship, data collection and local economy.

5.1.7 Development potentials for responsible and sustainable sport and recreational fisheries in the segments as complementary and/or alternative economic activities to the local fishing communities

While Kenya has been on the world map as a ‘hotspot’ destination for sportfishing, the survey of stakeholders revealed several key points when the development potential of the sport and recreational fishery is considered. Overall, stakeholders directly linked to sport fishing noted that sustainable development is closely linked with ensuring destructive fishing practices are halted and depleted stocks allowed to recover. Given the lessons mentioned herein, there is an opportunity to integrate sport and recreational fisheries in the ongoing efforts to diversify alternative income activities for local communities.

With the Blue Economy promoted as a priority under Kenya’s Vision 2030 development agenda, the contributions of sport and recreational fisheries provide prospective in achieving optimal socio-economic and cultural benefits. There is urgent need to incorporate the sport and recreational fisheries voice in ongoing efforts by the Kenya Marine Fisheries Socioeconomic Development (KEMFSED) Project in developing a Marine
Spatial Planning to integrate needs of resource users and strengthen livelihoods whilst securing the sustainability of stocks.

5.1.8 Key stakeholders and champions in the public and private sector as well as the Non-Governmental Organisations

The advancement of sport and recreational fisheries in Kenya has been successful across the years due to the efforts of various stakeholders that have championed for the growth of the fishery. Worth mentioning, is KASA, an umbrella organization for sport and recreational fishers in Kenya who have collected and collated catch and effort data from member sport fishing clubs from early 1980s to 2014. In recent years, KASA has diminished in its activities due to a decline in the sport fishing activities and membership numbers. Along with KASA, is the ABF, a charity organization which has overseen the tagging and data collection of billfish since the mid to late 1980s. The sport and recreational fisheries in Kenya also consist of sport fishing clubs which oversee fishing tournaments and competition (Watamu Sport Fishing Club, Malindi Sport Fishing Club, and Mnarani Fishing Club in Kilifi). In the South coast of Kenya, the Diani Fishing Classic tournament hosted by the Leopards resort has grown over the years. Several other hotels and resorts such as Hemingways resort and Ocean Sports Club in Watamu have also championed the development of sport and recreational fisheries in Kenya. There are currently two regional projects fussing on sport fisheries and the commonly targeted billfish species: Billfish Interactions, Livelihoods, and Linkages for Fisheries sustainability in the Western Indian Ocean (BILLFISHWIO), funded by WIOMSA and Strengthening data collection and capacity building for effective conservation and management of billfish in the Western Indian Ocean region, funded by Pew - both projects are led by Drs. Nelly Isigi Kadagi and Nina Wambiji. It is envisaged that the results and outcomes will contribute to the much needed data and knowledge and advance awareness of not only sport and recreational fisheries, but also the interconnectedness of these fisheries with other resource users and their importance in the socio-ecological and economic framework.

5.1.9 Recommendations and way forward

The following recommendations and way forward may address the challenges and opportunities for sustainable development of sport and recreational fisheries and related eco-tourism activities.

- Strengthening monitoring of fishing activities and implementing best practices by National Fisheries Institutions and associated stakeholders; As recommended by study respondents, a dedicated marine section with appropriate training needs to be established within Kenya Wildlife Services (KWS) and government fishery officers need more training on balancing fishery methods/numbers with available fish stocks;
There is a need for effective management of industry/commercial fishing fleets - relatedly, implementing inclusive marine spatial planning is necessary to reduce resource user conflicts;

As noted in the study, there is no current supportive infrastructure in place. The sport fishery is worth a lot to the economy if a true analysis were to be carried out. The sport fishery must be managed alongside the artisanal fishery, which has seen major changes over the past 10 years.

Need to diversify fishing and non-fishing economic opportunity - with increasing hunger and lack of alternative sources of income along the coast, more people have turned to fishing and use of unsustainable practises. The influx of fishing participants coupled with the licensing of foreign commercial fishing boats has led to overcapacity - and in turn impacting the commonly targeted sport fishing species. To develop a sustainable recreational and sport fishery, there is a need to integrate a long-term strategy that takes into account the sustainability of the species and the need for diversified sources of income and livelihoods for coastal fishing communities. While sport and recreational fisheries provide an avenue for investment and development, there is even a much larger danger of over-capacity as demonstrated by the influx of smaller boats “dinghies” who provide fishing for hire opportunities at a lower cost than the average price of fishing.

Evidently, individual sport fishing captains and sea fishing clubs have been instrumental in data collection and collating since the 1950s. It will be necessary for the National Fisheries Institutions to collaborate with the sport fishing community and strengthen data collection, reporting and management.

The prominence of Kenya as a sport fishing destination was made possible by the extensive promotion at national, regional and international level. There is an opportunity for the Kenya Tourism Board, the Kenya Tour Operators Association, and regional organizations to amplify the significance of these fisheries not only for Kenya, but also other countries in the ESA-IO region.

With the increasing focus on the Blue Economy agenda, it is increasingly necessary that long-term management and investment in sport and recreational fisheries takes into account the ecological factors and the implications of climate change and population growth.

Given these findings and recommendations, Kenya provides a model that can be improved and replicated in other countries, especially those with underdeveloped recreational and sport fisheries. This study commissioned by IOC presents a significant case for countries and implementing bodies in the ESA-IO to dedicate adequate resources for research, sustainable development and management.
5.2 TANZANIA

5.2.1 Historical and current status of recreational and sport fisheries sector

Tanzania comprises the Government of the United Republic of Tanzania and the Revolutionary Government of Zanzibar. About 95% of the total marine catches are dominated by artisanal fishing fleets which are multi-species, multi-gear and highly diverse (Jiddawi and Ohman, 2002; Igulu and El Kharousy, 2013) while the EEZ fisheries are harvested by Distance Water Fishing Fleets through a licensing system. The type of vessels includes non-motorized traditional dug-out canoes to boards with inboard or outboard engines. Size of fishing crafts or vessels may vary from 3 -10 meters long. Tanzania reports its official landings to the Food and Agricultural Organization (FAO) and IOTC, but there are no records of marine recreational and sport fisheries. Based on the Tanzania National Fisheries Report to IOTC, there are no large scale recreational fisheries (Mbukwa et al., 2019). However, interviews and surveys, online reports and grey literature sources indicate the presence of sport and recreational fisheries, to some extent in areas such as Dar es Salaam (Msasani Bay), off the islands of Mafia, Zanzibar and Pemba islands and the Pemba and Zanzibar Channel. Various fish species are targeted including billfish and tuna species, rainbow runner and the giant trevally among other lesser gamefish species.

5.2.2 Recreational fishing activities and their interactions with the coastal marine fisheries, tourism and environmental conservation sectors from a cross-sector perspective

Recreational and sport fisheries are restricted to the tourism sector especially in Zanzibar archipelago. Some localized efforts have been undertaken to support recreational fisheries such as the Coral Reef Garden Project in Zanzibar [https://www.coralreefcare.com/projects/reforestation-of-corals/]: the Coral Reef Care (CRC) under a Dutch foundation that aims at conservation and protection of marine ecosystems especially coral reefs.

parks. Nungwi on Zanzibar also hosts a number of recreational fisheries activities (Zanzibar Watersports) that visit the nearby Mnemba Island Conservation area.

Mafia Island hosts the first marine park in Tanzania since 1994 under the Marine Parks and Reserve Act No 29, of 1994 which also enacted the Marine Park and Reserves Unit of Tanzania. Several recreational fishing operators only conduct "catch-and-release" of billfish off the marine park with occasional catches of yellowfin tuna during the October-March period for hotel food but not inside the marine park. What has been noted is the deterioration of fishing due to heavy targeting of Giant Trevallies and other territorial species that are easily fished-out. The free availability of Chinese-made fishing gear for night fishing etc is also causing some negative impacts.

5.2.3 Existing fisheries and socio-economic data of the recreational fishing activities, including the target fish stocks

Evidence of the significance of sport fisheries targets species to the social, economic and cultural value dates back to 1966 when the Tanzania government five cents coin had a sailfish on the reverse symbolizing the iconic sailfish targeted by sport fisheries as a national treasure. However, there are limited studies on the ecology, socio-economic, technological and management and opportunities for sport and recreational fisheries in Tanzania.

5.2.5 Existing national or subnational policy, institutional and governance frameworks

Zanzibar has a separate reporting system for fisheries due to it being autonomous. Recently in the reconstruction of data to FAO it was discovered that Zanzibar's data had been missing from the dataset but this was improved since 2000 (Zeller and Pauly 2018, Bultel, et al, 2010). The separate data reporting may have definite impacts to the management of the resource as it can lead to overfishing or exploitation of the resources without precautionary measures particularly at point sources of overfishing. In a nutshell reconstruction of data from Tanzania including Zanzibar highlighted the magnitude of missing data and reporting mechanisms. By 2015 Tanzania had 15 gazetted marine reserves which included Bongoyo, Mbudya, Pangavini, Funguyasini, Sinda, Makatube and Kendwa situated in Dar es salaam, Maziwe (Pangani), Nyororo, Shungimbili and Mbarakuni (Mafia), Kwale, Ulenge, Mwewe and Kirui in Tanga. The impact of having these marine parks is still being quantified to see the contribution to fisheries in the country. Fisheries activities are governed under the Fisheries Act, 2003- (NO. 22 OF 2003), regulations (Made under section 57). The Fisheries Regulations require all fishing vessels (vessels used for "fishing purposes") to be both "registered" and "licensed" (Reg. 3 and 11). Licencing is also required for a variety of activities, including "ordinary fishing" with the use of a boat. Hence sport and recreational fisheries must obtain licenses from the Tanzania National Parks -specifically for those fishing in specified areas of the national
parks water bodies. The boat operated must also be licensed by Surface and Marine Transport Regulatory Authority (SUMMATRA) to ensure competency and safety of the tourists. Fishing in the Tanzanian EEZ is also regulated by the Deep Sea Fishing Authority Regulations, 2009.

5.2.6 Operational structures or business models of the recreational or eco-tourism activities

Based on study findings, recreational and sport fishing boats are individually or family owned businesses and in some cases operated as part of a private and exclusive membership fishing club (for example, the Dar es Salaam Yacht Club which has an exclusive fishing section and activities for its members). Yacht Club members who own charter boats provide cost sharing sport fishing services to others without boats. In Zanzibar, business entities such as the Zanzibar Watersports based at the northern tip of the island provide deep sea fishing services to clients while several others operate individual owned boats either for charter hiring or as private sport fishing boats.

5.2.7 Development potentials for responsible and sustainable sport and recreational fisheries

Notably, the development of responsible and sustainable sport and recreational fisheries is closely linked with the growth of tourism and in particular for places such as Tanzania that have a history of sportfishing although not to a large-scale. However, our study revealed that the fishery overall faces the challenge of overcapacity and overfishing, especially for critical species that were a major target for sport and recreation fisheries in previous years. In addition, increasing climate change implications and sources of marine pollution are impacting fisheries and ecosystem services in Tanzania. While there is an opportunity to develop recreational fisheries, it is necessary to evaluate the challenge of overfishing across different fishing groups whilst determining the methods of integrating sustainable sport fisheries in ongoing national efforts. The possibilities of responsible and sustainable development are evident in the Northern part of Zanzibar where several privately owned businesses operate sport fishing boats - but as noted from the study, there is need for awareness on the importance of sport and recreational fisheries, especially where majority of the fishing groups comprise artisanal fisheries with the remainder proportion comprising Distance Water Fishing fleets.

Given the emphasis on eco-tourism and the potential of tourism to the Tanzanian economy, sport fisheries could provide direct and indirect benefits with high returns if sustainably developed. The ongoing work on Marine Spatial Planning in mainland Tanzania and Zanzibar can enhance the contribution to sustainable blue economy and provide alternative livelihoods through emergence and maintenance of sport and recreational fisheries.
5.2.8 Key stakeholders and champions in the public and private sector as well as the Non-Governmental Organisations

At the government level, the Strategy to build a climate resilient and sustainable Zanzibar and Tanzania by 2030 provided an opportunity for sustainable, inclusive coastal fisheries recreational fisheries and eco-tourism and environmental stewardship at the local and national levels. Based on our findings, multi-sectoral buy-in is required to evaluate the significance of sustainable fisheries, including the process necessary to provide adequate infrastructure for operations of fully functional and effective sport and recreational fisheries. The prioritization of the blue economy by the United Republic of Tanzania to drive the achievement of 2030 Development Agenda offers an avenue to reimagine sport and recreational fisheries as an integral part of the local economy and diversification of alternative sources of livelihoods.

5.2.9 Recommendations and way forward to harness the socio-ecological opportunities for the sustainable development of recreational and eco-tourism activities

For an integrated and holistic sustainable development of recreational and sport fisheries in Tanzania, the study notes that:

- National and local entities would need to support the sport and recreational fishing industry as a source of employment and its role in contributing to the national GDP;
- Constant monitoring and data collection is required for this fishery to ascertain the catch composition and value, the stakeholders involved and the status of the fishery and associated species;
- Given that there are pockets of sport and recreational fisheries in some locations, awareness creation is required on the data needed and on the importance of these fisheries; Relatedly, there is need for the national fisheries institutions to connect with private businesses and sport fishing clubs that conduct sport fisheries to build synergies and collaborate on required infrastructure for the development of the sport and recreational fisheries;
- With the prospects of fisheries contributing to the Blue Economy agenda, there is urgency in incorporating the sport and recreational fisheries participants and stakeholders in the overall dialogue for fisheries management
- At a regional level, the study noted that highly migratory species such as billfish are targeted by sport fisheries in Kenya and Tanzania. As such, there is a need to collaborate on data collection and reporting particularly for billfish tagged off the Kenyan waters or other countries and move beyond transnational boundaries.
5.3 MOZAMBIQUE

5.3.1 Historical and current status of recreational and sport fisheries sector

Mozambique has reported presence of recreational and sport fisheries in waters in recent years (Chacate & Mutombene, 2015; 2016; 2017). In previous years, Afonso (2006) noted the presence of recreational fishing operations that were conducted by local fishing clubs and South African recreational anglers. Recreational fishing comprises fishers that are catching demersal and pelagic linefish as leisure either from the shore or a boat. Sport fishing is differentiated by the type of catch where most of the fishers targeted pelagic fish species such as billfishes, tropical tunas and Spanish mackerel (Chacate and Mutombene, 2017). About 50 boats of between 5-8 m operate annually and are mostly concentrated in the Southern part of the country. There is limited information on the recreational fisheries, although estimates of landings from Mozambique are about 58 tons of tuna and tuna like species (Chicate and Mutombene, 2018).

5.3.2 Recreational fishing activities and their interactions with the coastal marine fisheries, tourism and environmental conservation sectors from a cross-sector perspective

Since the late 1950s and early 1960s, game fish species such as black marlin, sailfish, and striped marlin have been reported in sport fisheries operations in Mozambique, particularly from the Bazaruto Archipelago and Santa Carolina Island. Sport fishing boats operate out of the Naval Club, Maritime Club and Inhaca Island. Other three locations in Maputo province include Ponta de Ouro, Ponta Malongane and Santa Maria campsites. Two sites have been identified in the province of Gaza, namely, Zonguene and Chidengule Beaches, while in Inhambane province, six sites with sport fishing were identified: Závora, Paindane, Guinjata Bay, Morrumbene, Inhassoro and Bazaruto. These locations are all associated with sport fishing clubs and tourist resorts along the beaches.

5.3.3 Existing national or subnational policy, institutional and governance frameworks

Fisheries is administered by the Ministry of Fisheries (MoF). Under the Ministry of Fisheries (MoF), the National Directorate of Fisheries Administration (DNAP) is responsible for administering licenses. In 2016, a total of 3,400 recreational licenses were issued of which about 25% represent those issued in Maputo province. However, national and subnational policies and governance frameworks are largely lacking for this fishery. In addition, recreational and sport fisheries are governed by the Mozambique Fisheries Law No. 22/2013 under Title II - on fishing and complementary activities while chapter II provides stipulations on fishing in maritime and inland waters.
5.3.4 Estimates the direct and indirect socio-economic impacts of recreational fishing activities in the local and national economies

The lack of adequate data emphasizes the apparent need to understand the status of the marine recreational fisheries in Mozambique given the historical prominence of Mozambique for sport fishing especially for billfish species. For example, the marlin magazine states, “Mozambique has a short but rich sport-fishing history. In the “early days,” from the late ’50s until the mid-’70s, before the nation’s civil war changed everything, a small group of South Africans and local Mozambicans fished the waters off Bazaruto, discovering a black-marlin fishery that rivalled that of the Great Barrier Reef in Australia”.

The awareness of sport fishing in Mozambique has mostly been spearheaded by sportfishing captains and anglers, particularly in areas such Bazaruto Archipelago and Santa Carolina Island which are prominent for black marlin in the WIO and suggested to be a spawning location for these gladiators of the sea in the WIO.

5.3.5 Recommendations and way forward to harness the socio-ecological opportunities for the sustainable development of recreational and eco-tourism activities

Overall, sport and recreational fisheries have to be fully integrated sustainably into the national fisheries plans. The government should work with stakeholders to devise better ways to collect data from sport fishers on their catches and determine the extent of these fisheries. The establishment of the Ministry of Sea, Inland Water and Fisheries, the National Council for Sustainable Development (NCSD) provides an opportunity and a pathway that can incorporate sport fisheries and their significance to livelihoods in the blue economy discussions. Mozambique’s five year programme of the Blue and Green Economy Action Plan provides for integration of both the blue and green economy in all the sectors. Opening discussion on the value of sport fishery species such as black and blue marlin to the local and national economy of Mozambique offers unique opportunities to develop policy, legislative and institutional frameworks (including capacity building) that is comprehensive. This will lead to expanded and effective government capacities that will also open up job opportunities and improvement of infrastructure.

5.4 SOMALIA

Somalia has a coastline about 3300 kilometers with the majority of the fish catch derived from artisanal fisheries (Hassan and Gichinga, 2018, Haile, 2017). The Somali marine fishery sector mainly operates on small-scale basis with the number of fishers ranging
from 4500 to 9500, the catch from foreign fleets recorded 160,000 tons in 2010, which makes 73% of the total catch from Somali EEZ (Glaser et al. 2015; Sumaila and Bawumia, 2014). FAO data (1950–2006) reports that Somali marine landings increased from 6,000 t in 1950 to 29,000 t by 1994 before declining to 27,300 t by 2001 (Sumaila and Bawumia, 2014). The country records 604 fish species and 420 of them are considered to be commercial fish species with a $135m annual economic value.

The Governance system in Somalia is unique, consisting of the Federal Republic of Somalia with a number of states. Somalia faced a long civil war that ran from 1991 to 2012) which had devastating effects on the social, political and economic aspects (IMF Country Report No. 19/256). In recent years, the national stability of Somalia is slowly improving with the country making structural adjustments through support by IMF and other funding agencies (for example the World Bank approved two pre-arrears clearance grants (in 2017 and 2018) while the EU approved a three-year budget finance grant in 2018.

Specific to fisheries, there have been both local and international efforts to invest in the fishing industry, but most of these projects have been unsuccessful due to lower local demand for fish as Somalis culturally prefer livestock. However, with the push for alternative diets and food and nutrition security, the fish diet is becoming more acceptable and with more participants switching to fishing to sustain their livelihoods. The Federal Republic of Somalia plans to establish an integrated approach which could enable the sustainable development of fisheries under the Blue Economy agenda. There are currently no official records of recreational and sport fishing in Somalia. Nonetheless, opportunities exist to invest in sport and recreational fisheries through support to Integrated Coastal Zone Management (ICZM), fisheries reforms, institutional and community capacity development, and tapping into the lessons learnt in other regional countries that have developed recreational and sport fisheries.

The study also notes that sport and recreational fisheries can be significant to Somalia, if the export market will open up to enhance the availability of boating and other equipment and gear required for this fishery. An opportunity exists to develop the sport and recreational fisheries particularly in touristic centres and regions with high-end resorts and hotels. Overall, the government would need to invest in infrastructure to support sustainable fisheries such as modern landing and weighing sites and storage facilities.

Given the interconnectedness of these fisheries to tourism, the increased international naval response and presence off the Horn of Africa means Somalia’s fisheries-based economy is on the increase and could provide an avenue to invest in the sport and recreational fisheries.
5.5 DJIBOUTI

The fisheries in the Republic of Djibouti are predominantly subsistence with many of the fishers using traditional gears on small vessels along the coastline. The marine pelagic catches consist of barracuda, seerfish, jobfish, groupers, swordfish and carangids, Indian mackerel, Spanish mackerel, sardine, and yellowfin tuna while the demersal catch comprise of snapper, lizardfish, grouper, seerfish, sea bream, jack, and emperor.

Djibouti’s islands and reef structures combined with warm temperatures during summer months provide conducive conditions for sport fishing. Sport fishing areas include Dorale, Khor Ambado, Arta Plage and the islands of Musha, Maskali and Waramous. However, Djibouti’s fisheries sector is not well-developed; its direct contribution to the national economy is negligible. There are no large-scale sport and recreational fisheries in Djibouti.

Given the ICZM and regional Blue Economy opportunities funded by the World Bank, the study notes that Djibouti has the potential to invest in strengthening institutions, policies, and strategies for sustainable sport and recreational development, catalyze investments to develop infrastructure especially in the main sport fishing areas, and enhance community participation in resource use and management.

5.6 ERITREA

Eritrea has a coastline of about 2,234 km in total, comprising 1,151 km of coast on the mainland and an additional 1,083 km of coastline to its Red Sea islands. The fisheries sector in Eritrea consists mainly of mechanized and artisanal fisheries. The fishery industry in Eritrea was active from the mid-1950s to the end of 1960s with the development of fishmeal, ice, and freezing plants. This advancement however was then hampered by political instability. In the last three decades, the sector was revitalized by the government in the 1990s with the development of various infrastructure. The fisheries comprise artisanal, industrial, and sea cucumber fishing. The artisanal fishery is conducted by local traditional fishers along the coast in the relatively shallow waters using wooden or fiberglass boats with a maximum length of 15-18 m. The fishery is characterized by vessels (usually bottom trawlers) capable of fishing in deeper waters on the continental shelf (down to 200 m depth), while sea cucumber fishing is done by local fishers and the harvest is sold primarily in Yemen.

Our desktop analysis shows that there are no official records of sport and recreational fisheries in Eritrea. However, the government has drawn a long-term national strategy to determine strategic interventions and priority to ensure that the fisheries sector contributes to Eritrea’s economy.
5.7 SUDAN

Sudan occurs at the crossroads of sub-Saharan Africa and the Middle East, with multi-faceted fisheries which can be categorized as subsistence and commercial. The subsistence or artisanal fisheries operate basic gears such as traps, cast-nets, and hook and line, either from river banks or from canoes and papyrus rafts, mainly carried out in the inland waters. In some cases, artisanal fisheries traditionally designed low-powered boats in the Jebel Aulia Reservoir as well as in the downstream of the White Nile. Commercial fisheries are still underdeveloped and usually carried out by organized cooperatives on medium to high-powered boats. The sport and recreational fisheries remain currently underdeveloped in Sudan.

5.8 SEYCHELLES

Small Islands and Small Island Developing States (SIDS) are special stemming from their relatively small sizes and populations, remote, exposed to complex coastal systems resulting in environmental challenges, fragile environments and have a narrow resource base. In spite of this, their localities and formations make them have very high biological diversity and are targeted for economic development by many foreign nations. They generally have higher incomes than other least developed and landlocked developing countries.

Seychelles has been in the forefront in actualizing the Blue Economy agenda in the WIO region and other regional and global initiatives such as the Sustainable Development Agenda 2030 (SDG’s), Aichi Target 11 of the Convention on Biological Diversity (CBD) and the Paris Agreement on Climate Change (2015). The Government of Seychelles approved its Strategic Framework and Roadmap in 2018. Its goal was to incorporate their economy, environment and society to an ocean-based sustainable development. The roadmap was focused on four key pillars: a) economic diversification and resilience; b) shared prosperity (creating new jobs and investment opportunities in ocean sectors); c) food security; and d) integrity of habitats and ecosystem services, sustainable use, and climate resilience. Seychelles also has the highest GDP (nominal) per capita in the African countries and is pegged on the country's standard of living.

Interestingly enough the coat of arms of Seychelles has two sailfish indicating its strong connections to the ocean. Recreational and sport fishing in Seychelles gained more prominence from the 2000s and has so far grown into a vibrant activity on Mahe and other surrounding islands. By 2016 -2017, Pepperrell et al (2017) estimated that about 40 sport fishing boats were active on Mahe while another 7-10 were found on Praslin Island.
The Seychelles Sport Fishing Club is the main club in the Seychelles which actively holds yearly tournaments and competitions and is responsible for running a billfish tag and release program. Billfish are the main target species although other small, medium and large pelagic species are caught such as tunas (Scombridae), sharks (Carcharhinidae), trevally (Carangidae), grouper (Serranidae), snapper (Lutjanidae) and rabbitfish (Siganidae) among other species. Reconstruction of total catches indicated that landings in the recreational sector had increased by 3.5% in 2010, and that there was more potential for the landings to be higher given the number of boats involved in the sector (Le Manach et al., 2015). The Seychelles Fishing Authority (SFA) is responsible for the development and management of fisheries, although sport fishing is managed under the Seychelles Ministry of Tourism.

Sport and recreational fishing is active in the Seychelles, with large and smaller well-equipped vessels available for charter. There is active promotion of sportfishing for pelagic fish on the internet, in hotels on Mahe, and on Beau Vallon beach. Billfish are key target species, but other pelagics such as tuna, wahoo, barracuda, bonefish, dogtooth tuna, milkfish, moustache trigger, Indo-Pacific sailfish, Indo-Pacific permit, yellowfin tuna, yellow margin trigger, giant trevally, bluefin trevally, snappers, groupers, wahoo and blue marlins, and dolphinfish are actively sought. The main sport fishing areas in Seychelles include: (a) Eden Island marina, a large, modern marina which is situated on the eastern side of the island, where several charter and private boats dock throughout the year. The charter boats range from large to very large, modern and well equipped. Some are owned by companies that operate two or three boats while several other large charter boats (50’ to 60’) are privately owned and employ a full time captain and crew; (b) Bel Ombre harbour: A small, public harbour on the northwest side of the island, where various sportfishing and private boats are moored; and (c) Beau-Vallon: A beach resort area, adjacent to Bel Ombre. Several charter operators take bookings for charters.

Fly fishers flock the Alphonse Atoll, Cosmoledo equated to the Galapagos of Africa Astove which is the home to the biggest giant trevallies, Farquhar and Poivre known for the best popping and jigging site. Seychelles is famed for having a number of IGFA records for species caught in and around the outer islands.

5.8.1 Historical and current status of recreational and sport fisheries sector

Historically, since the 1960s, there was only one weigh-station, at the Marine Charter Association. This followed a series of fishing competitions, many in partnership with the Rotary Club of Victoria, and in 2009 the Seychelles Sport Fishing Club (SSFC) was formally registered by a group of friends and fishermen. This is the current official SSFC (and IGFA) Seychelles weigh-station. In 1972, the first organized fishing competition was organized
by the Marine Charter- “The National”. Since 2009, annually and biannually an average of 7 fishing tournaments have religiously been held in the spirit of sport fishing, conservation, and education. In 2010 SSFC officially joined the IGFA as the Seychelles’ official fishing club and have since partnered with many well-known, international organizations such as the World Wide Fund for Nature (WWF) to promote sustainable fishing practices, focusing on Conserving Seychelles Marine Resources while keeping the traditions of old.

There is an important recreational fisheries sub sector active making the country the hotspot of salt-water fly-fishing and casting fly lines on the shallow flats of the Outer Islands while blue-water fly-fishing is gradually gaining popularity. The Inner Islands which include 41 granitic islands form a cluster around the principal islands of Mahé, Praslin and La Digue. Seychelles holds a number of IGFA records for species caught in and around the outer islands. Many records have been set while fishing in Seychelles.

5.8.2 Recreational fishing activities and their interactions with the coastal marine fisheries, tourism and environmental conservation sectors from a cross-sector perspective

The fisheries sector is categorized by three subsections which include the artisanal fisheries, semi-industrial fishery, consisting of small locally-owned long-liners targeting pelagic species (mainly tuna and swordfish); and industrial fisheries, comprising foreign-owned purse seiners and large long-liners primarily targeting tuna species (yellowfin and skipjack). Seychelles has an advanced fish processing plant which churns our products for the local market and export and a canning factory processing tuna, mostly for the export market respectively. The semi-industrial fisheries in Seychelles began in the 1990’s. Some of the environmental effects that may be envisaged are mitigated generally by the presence of Marine Protected Areas in the country thus enabling a combination of prohibition and zone separation for control of angling, shellfish collection and spearfishing.

5.8.3 Existing fisheries and socio-economic data of the recreational fishing activities, including the target fish stocks

Fish stocks in Seychelles have declined by more than 60% in the last three decades, which has resulted in a loss of income for fishers. Meanwhile the fishing fleets have continued to grow and now exceed sustainable levels which is raising concern to the country (SEYCATT- https://seyccat.org/about-us/).

5.8.4 Estimates the direct and indirect socio-economic impacts of recreational fishing activities in the local and national economies
A number of opportunities exist for the development of this fishery in Seychelles and this stems from the fact that the country has big game recreational sport fishing which may generate income in dollars.

The two fisheries face considerable pressure from purse seiners and long liners who overlap in the same fishing zones of the recreational and sport fishers. Some have been noted to sell the fish which is against the law. Thus there is, need for a more balanced fishery with some giving way to recreational sport fishing there is also overfishing on the plateau which may affect the fish stocks. The main problem is the regulating of the fishery to its fullest as most of it still remains open access and it may be affecting the artisanal fishery management as well. The high cost of operations also deter investment in the fisheries.

### 5.8.5 Existing national or subnational policy, institutional and governance frameworks

The SFA is charged with managing the Fisheries sector in the country as they are the regulatory arm of government in the field of fisheries. Spearguns are prohibited throughout Seychelles’ waters while no fishing is permitted within 200 metres around Aride Island Nature Reserve. The fisherfolk engage in the practice of ‘tag and release’ so as to fish responsibly and conserve the species as well for the next generations. The country is a signatory to a number of global initiatives such as CITES. The responsibility of promoting Seychelles’ fishing industry, organizing and developing fishing, preserving its resources, formulating and implementing national policies on fishing matters falls under SFA.

Seychelles Blue Economy Strategic Roadmap was all inclusive and was geared to various sectors namely maritime security, tourism, hydrocarbons, mineral exploitation, Fisheries, aquaculture, mariculture and post development. To achieve this several relevant stakeholders are involved in achieving the goal. In particular it involved the following organizations namely the Blue Economy Department, Seychelles Conservation and Climate Adaptation Trust (SEYCCAT), SFA, Ministry of Environment, Energy and Climate Change (MEECC), Ministry of Finance, Trade and Economic Planning (MFTEP), National Institution for Science, Technology and Innovation (NISTI), Ministry of Employment, Entrepreneurship Development and Business Innovation and the University of Seychelles.

In Seychelles, no fishing license is required for recreational fishing although several rules and regulations must be followed including fishing is prohibited around Curious, Cocos Island, Bay Port Launay / Baie Ternay and the Sainte Anne Marine National Park. Several legal frameworks govern the fisheries activities in the countries such as the Seychelles Fisheries Act 24 of 2014.
5.8.6 Operational structures or business models of the recreational or eco-tourism activities including lessons learnt and best practices that have contributed to their success

Tourism is the backbone of the country as it is marketed as an exclusive beach and sun destinations where it was noted that most hotels and resorts were owned by foreign transnational hotel chains who imported personnel, technologies, food and drinks. Mauritius and Seychelles are identified. To mitigate against negatively impacting on the development of local businesses and precarious employment a concept of luxury Community-based Tourism (CBT) was suggested where a mechanism to localize the ownership of hotels and to address inequality and promote social justice. Luxury CBT would involve a novel community-based boutique tourism (CBBT) industry that takes into account the Seychelles’ geographical uniqueness (Giampiccoli et al, 2020).

5.8.7 Development potentials for responsible and sustainable sport and recreational fisheries in the segments as complementary and/or alternative economic activities to the local fishing communities

With the drive towards having the first blue bond in Seychelles which was launched in 2018, it was applied to buy out the country's debt of $21 million and support sustainable fisheries, climate change adaptation and marine conservation projects and most importantly set up an endowment fund for the future generations of the country's people (debt for nature). The bond raised 15 million USD from international investors. In order to synergise the efforts by the locals and foreign investment, there is need to encourage joint marketing initiatives. There are associations that are quite organised which helps with management of the fisheries, especially with sports fishery. It was also noted that the Inner Islands were quite saturated with fishing activities and opportunities existed on the outer islands.

In addition, Seychelles being adverse to climate change issues partnered with the Nature Conservancy (TNC) in February 2018 in another unique debt-swap deal geared towards environmental financing whereby marine conservation and efforts towards climate adaptation would be highlighted. This was facilitated by setting up SeyCCAT. Two new MPAs covering 210,000 square kilometers in this innovative debt-for-conservation deal were realized (Sahuque, 2015). Under the deal, the TNC raised $21 million, allowing Seychelles to pay off its debt, in exchange for a commitment to increase its protected areas from .04% to 30 percent. These first new MPAs include a coral reef and UNESCO World Heritage Site around the islands of the Aldabra group. The area is home to the dugong and the only breeding ground for an endemic species of giant tortoises.
5.8.8  **Key stakeholders and champions in the public and private sector as well as the Non-Governmental Organisations who are pushing for sustainable, inclusive coastal fisheries recreational fisheries and eco-tourism and environmental stewardship at the local and national levels**

Seychelles has a very well developed sport and recreational fishing industry with a number of stakeholders starting from the Government, boat owners, fishing crew, hotels Commercial fisheries boats, Seychelles Sports Fishing Club (SSFC), The Minister for Fishery and actual fishers/vessel owners and a number of non-governmental organizations. The main sport fishery operators, the fishing camp operators on the outer islands

5.8.9  **Recommendations and way forward to harness the socio-ecological opportunities for the sustainable development of recreational and eco-tourism activities**

Seychelles has invested tremendously in the ocean economy and has a vibrant sport and recreational fishery. Some of the recommendations include enforcing bag limits, size limits, having fewer long lining and purse seiners in their waters. It is critical that these fisheries be better managed and the respective regulations and the different laws governing the fisheries be implemented to achieve sustainability. Fisheries management plans developed for different fisheries must be implemented to rebuild the fish stocks and the livelihoods of fishers that depend on these resources. By and large all the relevant stakeholders and the public at large need to be made aware and educated about the role of sport and recreational fisheries in Seychelles while the active fisherfolk should continue with embracing the catch and release fishing methods for prosperity of the fisheries.

5.9 MADAGASCAR

Data relating to marine recreational and sport fisheries are scarce and, in some cases, not available. Although there have been reports on increasing fishing tourism in the last two decades that target mainly marlin and tuna (Le Manach et al. 2011, Jain, 1995), it is difficult to ascertain the trends. In addition, these data are generally lacking in official reporting to FAO. Despite the lack of data, online sources indicate the importance of Madagascar as a sport fishing zone. For example, “Madagascar is one of the world’s leading sport fishing destinations. The big island has one of the best fishing waters of the planet, where you can fish for species such as the yellowfin tuna, bonito, barracuda, black marlin, sea bream, or swordfish.” With 55% of the Malagasy population living on the coast and heavily reliant on fisheries (Harris, 2011; Le Manach et al., 2012), there is a need to
evaluate the impact of sport and recreation especially in the face of competing multiple fishing sectors.

5.9.1 **Key stakeholders and champions in the public and private sector as well as the Non-Governmental Organisations**

In Madagascar, a number of stakeholders are involved in marine fisheries given that sport fishery is not a wide spread along their coastline and only occurs in specific areas in the north of the island like in Nosy Be. Fisheries is a key element in the lives of Madagascan but this is artisanal fisheries. The Government which includes the Ministry of Fisheries, Ministry of Environment, Universities especially the Institut Halieutique et des Sciences Marines Université de Toliara, (IHSM), Centre National de Recherches Oceanographiques (CNRO - (National Center for Oceanographic Research), Association for Fisheries and Rural Development in Africa / Association Pisciculture et Développement Rural en Afrique (APDRA), MIHARI Network - Madagascar Locally Managed Marine Area Network and several NGO’s under the MIHARI network all work towards managing the fisheries of the country and provide technical and social skills to the citizenry.

5.9.2 **Recommendations and wayforward to harness the socio-ecological opportunities for the sustainable development of recreational and eco-tourism activities**

Study findings indicated that there is a need to continue the stock assessment process for the next year and enhance the opportunity for communities to understand their fisheries and actively participate in decision making and diversification of alternative livelihoods from direct and non-direct fishing related activities. Despite the different viewpoints in terms of fisheries management, it is necessary to highlight the importance of different tools which are useful and efficient for the management of the fisheries for each states, such as the FAO code of conduct of Responsible fisheries, Environmental Impact Assessment or SEA and finally the MPAs that can make a significant to preserving the marine environment and marine resources. Sport and recreational fisheries remain underutilized and unknown in most of Madagascar. It would be necessary to raise awareness of this fishing type and to promote more inclusive and participatory approaches in examining ways of involvement in the fishery. It is necessary to identify all the people, the companies which practice this fishing. Scientific monitoring must be strengthened to assess catches and stocks. It is also necessary to increase awareness of the application of the regulations in force. There is urgent need to streamline the issuance of boat license, fishery regulations, catch monitoring and other biological parameters of the caught species.
5.10 COMOROS

The Union of Comoros comprises Grande Comore, Anjouan, Moheli and Mayotte islands with an estimated EEZ of 160,000 km². Although Mayotte is under the administration of French. The fisheries in Comoros are primarily small-scale and consist of three main categories including traditional, artisanal and semi-industrial (Breuil et al., 2014, Everett et al., 2017). Fishing is the second most important sector of the economy after agriculture and provided for 10% of employment and 8% of the GDP in 2013 (Cofrepeche et al., 2013; World Bank, 2017). Recent catch reconstructions estimated that total catch was nearly 516,000 tons from 1950-2010 with about 96% coming from the small-scale boat fleet (Doherty et al. 2010). Declines in fish catches, species size and composition in the last twenty years have been reported by fishers (Hauzer et al. 2013; Doherty et al. 2010). But there is no information to verify this decline. Regulations and management of domestic fisheries is the responsibility of the Department of Fishing of the Ministry of Agriculture, Fishing and the Environment. There are no official statistics currently available on marine recreational fishing in Comoros. Fisheries development is overseen by a state agency, the Development Company for Small-Scale Fisheries of the Comoros (Société de Développement de la Pêche Artisanale des Comores).

These fisheries existed in the past, but there was no official data due to the fact that the period corresponded to the period of political instability (darkness of Comoros). There are no recreational fisheries activities in the country. In the apartheid era in South Africa, South African investors built or renovated several hotels during the 1980s (with assistance from the South African and Comoran governments), a hotel in the 182-room Galawa Beach on Njazidja accommodated sport fishers and since then the sector has been dormant thus there are no documented or perceived environmental impacts of these two fisheries. The country has a big population of artisanal fishers.

The country’s economy is exposed to a number of structural imbalances and is highly subject to natural and external constraints beyond its control (the remoteness geographically, distance from international markets, high transportation costs across the seas, the insurance and re-insurance of goods and services (Hayer, 2018), few resources in the local market, and in the absence of economies of scale where it is considered to be a lower-middle income economy.

The Fisheries sector is currently governed by the Law on Comorian Fishing and Aquaculture, 2007. At the moment, in Comoros the infrastructure such as landing and weighing sites for sport and recreational fisheries are near their homes and mostly centralized. There are no processing facilities before selling fish. Thus the rate the current exploitation of the sport and recreational fishery is very minimal. There is also non-adequate traditional fishing infrastructure and no official recognised laboratory, It was
clear that spaces were available for infrastructural development but a deficit in knowledge and engagement

The key stakeholders in Comoros are companies with shareholders, community groups structured as Fishery Cooperatives, family businesses which involve more than one family member, government, tourism operators, Non-governmental Organization representatives and hotels.

5.10.1 Recreational fishing activities and their interactions with the coastal marine fisheries, tourism and environmental conservation sectors from a cross-sector perspective

Several opportunities exist for the development of the sport and recreational fisheries in Comoros given its geographical position. It has a larger EEZ than the landmass. This is envisioned to create job opportunities and increase the income and fight against poverty. The biggest challenge is the lack of infrastructure to support these fisheries and the Government would need a long term strategy to realize this. This would also involve empowering the fisherfolk with the respective fishing skills, and having the government commitment to financially supporting the whole value chain in these initiatives. The example of the blue bond by Seychelles would achieve this. Lack of suitable resource people also

5.10.2 Recommendations and wayforward to harness the socio-ecological opportunities for the sustainable development of recreational and eco-tourism activities

Given its geographical position, the government of Comoros is charged with securing the fisherman, securing the licensing system, training the fisherman in new harvesting techniques that are not hampering the marine and coastal environment. The inadequacies with regards to data collection in all fish landing sites and promotion of semi-industrial fisheries and sport and recreational fisheries is key. The infrastructure in terms of the road, train and rail network needs to be revamped to support the development of landing sites, storage facilities for fish and other commodities and improvement of the whole value chain. This will ultimately improve the GDP of the country.

5.11 MAURITIUS

Mauritius is the second country in Africa with the highest Gross Domestic Production (nominal) per capita right behind Seychelles. Mauritius has an active and internationally recognized sport fishery especially for large blue and black marlin (Pepperrell et al., 2017). The target species consists mainly of blue marlin (Makaira nigricans), black marlin
(Makaira indica) and sailfish (Istiophorus platypterus), striped marlin (Tetrapturus audax) and yellowfin, bigeye and albacore tuna (Scombridae). Other species like skipjack, sharks and dolphinfish (Coryphaena hippurus) are also targeted. Around 60 charter sport fishing boats operate in Mauritius and are concentrated in several locations, mainly on the western side of the island. In 2016/2017, the landings from the recreational fishery were estimated to be about 350 tons (Mootoosamy et al., 2017). While there is limited data on the recreational catch trends, previous studies in Mauritius have shown that recreational activities add fishing pressure on marine resources (Paul, 1987, Sobhee, 2006). The under-reporting and general lack of data for sport fisheries in Mauritius is similar to other countries in the WIO with regards to catches of the recreational and small-scale fishing sectors, which are often underreported in the official statistics and especially for the Western Indian Region (Van der Elst, 2005).

Rodrigues Island forms part of the Republic of Mauritius. Since 12 October 2002, the island has been autonomous and has its own assembly. The island is located about 560 km north-east of Mauritius and nearly 800 km from Reunion Island. The main sources of income and economic activity are tourism, fishing, agriculture and animal rearing. The surrounding shallow lagoon three times the land mass has supported mainly seine net fishing, basket-trap fishing, line fishing, and octopus fishing which suffered from overexploitation. In order to manage the resources 5 Marine Protected Areas and reserves were established: one in the south east of the lagoon (UNDP/GEF/RRA 2005) and four in the north respectively (collaboration by GEF SGP, ReCoMap and RRA, Pasnin, 2011).

It also has an extensive continental plateau which provides good fishing grounds for game fishermen and a variety of fishing methods including jigging, big game fishing, and big baiting. It is noted as the best “multi-fishing” destinations in the world and is famous for its sport fishing hotspots. Some of these areas are around Rodrigues, East Bench, and Hawkins Bench. The common species include billfish species (marlins and sailfish), Wahoo, Mahi, and, Giant Trevally, King Mackerels, Red Bass and Dogtooth tunas, YellowFin Tunas, groupers, sharks, snappers, coral trout and many others.

5.11.1 Historical and current status of recreational and sport fisheries sector

The sport or big-game is a major driving force in the tourism industry. Each year, international tournaments in big game fishing are organized. The catch in this fishery consists mainly of blue marlin (Makaira nigricans), black marlin (Makaira indica) and sailfish (Istiophorus platypterus), striped marlin (Tetrapturus audax) and yellowfin, bigeye and albacore tuna. Other species like skipjack, sharks and dolphinfish (Coryphaena hippurus) are also caught. Big Game fishing involves boats of length between 10 and 15 m. However, limited official data or information is available on the catches and
interactions with other fisheries in terms of catches of commonly targeted species. A desktop analysis of charter operations showed that some catch information and pictures were occasionally published on their social media platforms.

The main landing sites of sport fishing charter operations include:

Grand Baie, which occurs on the north-eastern tip of the island. There is one main jetty which is used by sport fishing boats with several charter operations located in this area.

Black River: A number of sport fishing and recreational boats are located in this area. An example is the J.P. Henry Charters, with three boats that are docked La Balise Marina in Black River estuary. The Le Morne Anglers Club, the largest club associated with sport fishing in Mauritius, is located near the jetty of La Carangue.

Trou d'Eau Douce: The main charter sport fishing operator is the Royal Big Game Fishing on the eastern side of the island, with three large well-equipped sport fishing vessels equipped with professional skippers and crews.

There is one active charter operator on Rodrigues Island, the Rod Fishing Club, which has one boat. The website indicates a mixed fishery, including reef fish, inshore sportfish such as carangids and some offshore pelagic catches including billfish and tuna.

5.11.2 Recreational fishing activities and their interactions with the coastal marine fisheries, tourism and environmental conservation sectors from a cross-sector perspective

Big-game fishing mainly takes place in the off-lagoon in the Northern, Western, South western and South-eastern part of the island, as the sea outside the lagoon in the eastern part are highly influenced by the south east trade wind and thus the sea conditions are not conducive to such activities. Sport fisheries interact with other fisheries such as artisanal and commercial sectors in the fishing grounds, and thus resulting in resource user conflicts associated with the use of fishing aggregation devices (FADs). With the growing demand for resource use by different groups, these conflicts are escalating as there are no set regulations to determine multiple resource use and sharing in relation to the FADs.

Mauritius has proclaimed 8 Marine Protected Areas that include 6 fishing reserves and 2 marine parks and the Marine Protected Areas Regulations are prescribed in the Fisheries and Marine Resources Act 2007. Blue Bay Marine Park (3.53 km2) was proclaimed in 1997 and declared a Marine Park in June 2000 under the Fisheries and Marine Resources Act 1998. In 2008, it acquired the status of a Ramsar Site. Since July 2016, its Visitors Centre is fully operational and actively contributes to the Sensitisation/ Public Awareness Programme on the importance and conservation of the marine ecosystem.
5.11.3 Existing fisheries and socio-economic data of the recreational fishing activities, including the target fish stocks

The contribution of sport/big-game fishery through the tourist industry is significant especially when linked to the direct and indirect contributions into the economy. This sector employs locals for operational works as well as contributing to the local fish market. The big-game sports fishery produces about 350 tonnes of pelagic fish annually and engages over 60 sport and recreational fishing boats. The sports fishery has been noted as a major driving force in the tourism industry (IOTC-2020-SC23-NR14) resulting in the provision of job opportunities and socio-economic security within the value chain.

5.11.4 Estimates the direct and indirect socio-economic impacts of recreational fishing activities in the local and national economies

Depending on the species caught, the fish are mostly sold as processed (smoked) and packed in the local market. Pre-covid, several tournaments for sport fishing were held in Mauritius, including: the Grand Baie Yacht Club tournament, an annual one day event bringing together between 40 and 50 boats, 80% of which are private and 20% charter. During tournaments, marlins are released if estimated at less than 300lb; outside of tournaments, marlins are rarely released. The annual International Offshore Billfish Tournament is an annual event run by Le Morne Anglers Club. Mauritius Billfish Release International Tournament.

5.11.5 Existing national or subnational policy, institutional and governance frameworks

In Mauritius, all sport fishing boats, private and charter, require a licence from the Tourist Authority, plus a Mauritius skippers’ permit, and a mooring permit. The type of licence is based on the size of the vessel and the number of persons it may carry. While there is currently no legal framework for monitoring sport fishing in Mauritius, provision for monitoring and managing sports fishery catches will be institutionalised under the new Fisheries Bill. Sport fishing boats are restricted as to the distance offshore they are permitted to operate. The Fisheries Department issues licences to sell fish to fish mongers, which includes charter operators. The market is not regulated.

A National Plan of Action is essential for proper management of the Big-Game fishery which shall cater for monitoring, control and sustainability of the fishery as well as reduce conflicts among the stakeholders. There are a number of legal frameworks that support ocean biodiversity in Mauritius namely the:
1. The Fisheries and Marine Resources Act 2007 caters for the management, conservation, protection of the fisheries and marine resources and protection of marine ecosystems.
3. The Fisheries and Marine Resources (on automatic identification system) Regulations GN No. 116 (2016).

5.11.6 **Operational structures or business models of the recreational or eco-tourism activities including lessons learnt and best practices that have contributed to their success**

A number of business entities own and operate several sport fishing vessels. Boats are generally large (8 metres and above) with modern fishing equipment and gear. A study by Pepperell et al (2017) estimated that there are around 40 to 50 sport fishing boats in Mauritius. This provides the potential for sustainable development while considering the environmental implications.

5.11.7 **Development potentials for responsible and sustainable sport and recreational fisheries in the segments as complementary and/or alternative economic activities to the local fishing communities**

There are a number of opportunities in Mauritius with regards to the sport and recreational fisheries. Its status as the second country in Africa with the highest Gross Domestic Production (nominal) per capita right behind Seychelles gives it more opportunities and income. It also has a vibrant sport and recreational fisheries and conducts IGFA tournaments which are world renown and bring in a lot of high end tourists. It has been noted that there are interactions with other fisheries resulting in conflicts with registered FAD fishers yet there is no regulation that has control on fishing around FAD.

5.11.8 **Key stakeholders and champions in the public and private sector as well as the Non-Governmental Organisations**

Mauritius has several private fishing clubs which have experienced membership with long term captains, skippers and boat owners and any individual Mauritian company listed with IGFA. The government including the Ministry of Blue Economy, Marine Resources, Fisheries and Shipping, Ministry of Tourism Authority are also major stakeholders as it provides the platform from which these fisheries operate. This being an exclusive destination as Seychelles, the GDP has been positively impacted by sport and recreational fisheries.
5.11.9 Recommendations and wayforward to harness the socio-ecological opportunities for the sustainable development of recreational and eco-tourism activities

Mauritius is a key fishing nation especially when it comes to commercial fisheries. It supports various activities around the tuna transhipment, bunkering, port-related services for tuna fishing vessels and tuna canning which have great economic outputs.

It therefore needs to better control the activities in the EEZ by ensuring that agreed upon fishing quotas are adhered to. The cooperation of the sport fishery operators is needed in order to have reliable data for an effective monitoring of this fishery which is commendable at the moment from SFA through the Seychelles fishing clubs. A monitoring plan and data collection for recreation is essential. It has also been noted that the licencing system for big-game fishing be enhanced for proper monitoring and control of the fishery which will contribute to the management of these fisheries under the auspices of IOTC.
6.0 CONCLUSION, RECOMMENDATIONS AND WAY FORWARD

The study has noted several challenges of developing sustainable recreational and sport fisheries at national, regional and systemic level, which require a comprehensive approach that incorporates successful, long-term sustainable development of these fisheries taking into account the challenges. Such an approach will need to go beyond piecemeal activities and action and should incorporate elements to strengthen governance, enhance data and information collection and sharing, and investment in sport and recreational fisheries, marketing, all with an inclusive lens that considers local coastal and vulnerable communities. For example, improving the governance of the management of fishing sectors, through the promotion, regulation, and monitoring of practices is an important contributor to curbing unsustainable practices, overfishing and overcapacity, building resilience to the impacts of climate change, and sustaining the livelihoods of coastal communities.

The opportunity to collaborate with sport and recreational fisheries who voluntarily report data could strengthen data collection, such as catch and composition and improve the socio-economic and stock evaluation of these resources and other ecosystem services. This will inform decision-making and facilitate evidence-based policy-making and development. Sport and recreational fisheries is a one gateway to achieving a sustainable Blue economy in many countries hence should be clearly studied and supported.

The perspective of promoting sustainable sport and recreational fisheries and creating jobs, improving participation of national and international clientele, developing infrastructure, and considering implications of overfishing present opportunities to capture inclusive socio-economic and cultural benefits, enhance investments (in various dimensions of sport and recreational fisheries) and increase resilience of these fisheries.

The study has concluded and recommended the following:

- There is a potential risk of overfishing due to multiple fishing groups competing in the same fishing grounds, especially areas with active recreational and sport fisheries. There is an urgent need for countries to undertake a situational analysis of fishing grounds and groups to examine overlaps and determine shared resource management;
- Majority of the sport and recreational fisheries in the ESA-IO do not submit fisheries data and information which in turn hinders the development of interventions for sustainable use. In 2016-2017, IOTC implemented a regional standardized data collection method and database for recreational fisheries and
piloted in four countries (Kenya, Seychelles, Mauritius and La Reunion). There is a need to work with national fisheries institutions, sport fishing clubs and individual boats and captains to evaluate the existing and previous databases to improve reporting from these fisheries.

- The commonly targeted species in recreational and sport fisheries are under intense pressure from an increasingly large number of multiple users. Based on the study, game fish species, for instance, have declined over the years.

To address this challenge, it is recommended that national fisheries institutions implement adequate and effective regulatory framework to monitor and implement the fisheries regulations in their respective countries.

- Sport fishing is still underdeveloped in some countries, but with a great potential of sustainable development, job creation and supporting socio-economic and cultural security. Given these prospects, a strategy for promotion of the sport and recreational fishing activities would be relevant particularly in the current discourse on the significance of the Blue Economy for ESA-IO countries.

- A socio-economic analysis of sport and recreational fisheries value chain and significance in the ESA-IO region is critical for implementing sustainable development objectives.

- While sport and recreational fishing has historical prominence in some countries in the ESA-IO region, the fishery remains unknown to the general public. It is recommended that countries and associated sport fishing entities need to:
  - Launch an awareness campaign at local and national level to sensitize the public on the importance of sport and recreational fisheries;
  - Create awareness and education to integrate knowledge about these fisheries into the curriculum.
  - Development and training on fishing techniques for communities to diversify fishing opportunities.
  - Need to promote domestic sport fishing in order to create an available market locally.

- To develop a new concept of integrating sport fisheries infrastructure into current development plans. For example, establishing sport fishing marinas, boatyards and moorings at strategic locations to promote investment, tourism and local involvement. The new concept will bring together local coastal fishing communities and the public to diversify economic opportunities.

- Given the limited information and data, a pilot project to empower all stakeholders in this fishery is necessary to ensure voluntary data reporting and compliance, co-management and conservation. There is a need to promote and support research
not only on gamefish species, but also on other pelagic species to understand the connectivity at ecosystem level.

- Sport and recreational fisheries contribute important information to IOTC’s efforts in managing tuna and tuna like species. It is envisioned that the data collection from sport fisheries will support IOTC efforts in understanding the stock structure. Recognizing the efforts by IOTC to intensify country reporting and compliance, national fisheries institutions should maintain the reporting of information from sport and recreational fisheries.

- Sport fishing captains and crew in most ESA-IO countries have voluntarily reported tagging information for key game fish species such as marlin and sailfish for several decades. These data have continued to play a significant role in understanding some of the pelagic fish species in the region. Voluntary data collection and tagging should be encouraged and sensitized at national and regional level to support information gathering.

- Regional Cooperation: Sport and recreational fisheries are heterogeneous and travel across multiple jurisdictions. Similarly, the common targeted species such as billfish and tuna are trans boundary. Regional cooperation in sustainable development and management of sport and recreational fisheries is paramount in promoting best practices, sharing of lessons and experiences, and developing collaborative national and regional frameworks.

Notwithstanding, the study also noted the impacts of Covid-19 on the sport and recreational sector which had short, medium and potential long term effects (FAO 2021). The World Tourism Organization (UNWTO) has launched a new dashboard on COVID-19 and tourism which shows data on the impact of COVID-19 on the tourism sector across the world, by regions and by destinations (https://www.unwto.org/international-tourism-and-covid-19). Cessation of movement locally, regionally and globally put a dent into these fisheries as they are directly linked to tourism. This is due to the fact that borders were also closed until recently when the vaccinations have been developed and borders opened. In some countries, curfews were imposed and fisherfolk and clients would not venture into the sea at the opportune fishing hours. The whole value chain was disrupted when citizens were quarantined or when they did not venture out due to the social distancing health protocols laid down.

The drop and halting of international travel, which has resulted in a reduction in sport fishing tourism clientele lead to lack of activity for sport fishing charter vessels, as their work has become unprofitable. Based on the study, sport fishing charter operations in the ESA-IO heavily relied on international clients which impacted these businesses and by extension the job opportunities generated by their presence. Covid-19 implications on transport and movement of goods and people resulted in limitations of fishing activities
which constrained the fishery. Building back better fisheries that incorporate sport and recreational fisheries will require consideration of the implications of the pandemic on their operations in order to create resilient and sustainable operation models.
ANNEXES

ANNEX 1: TERMS OF REFERENCE

ECOFISH PROGRAMME: RECREATIONAL (SPORTS AND LEISURE) FISHERY 2020 TERMS OF REFERENCE - SHORT TERM EXPERTS [STE’S]

FORMULATION OF REGIONAL FRAMEWORK FOR THE RESPONSIBLE AND SUSTAINABLE DEVELOPMENT OF RECREATIONAL FISHERIES AS PART OF AN UPDATE ON THE REGIONAL MARINE FISHERIES SECTOR STRATEGY FOR THE EA-SA-IO REGION [ACTIVITY 1.2.3]

1.0 BACKGROUND INFORMATION

1.1 PARTNER COUNTRY: THE STUDIES WILL CONCERN THE EA, SA & IO REGION, NAMELY THE FOLLOWING COUNTRIES: MAURITIUS, SEYCHELLES, MADAGASCAR, COMOROS, KENYA, TANZANIA, MOZAMBIQUE, DJIBOUTI, SOMALIA, ERITREA, AND SUDAN.

1.2 CONTRACTING AUTHORITY: THE INDIAN OCEAN COMMISSION - ECOFISH PROGRAMME

1.3 BACKGROUND

The “Contribution of Sustainable Fisheries to the Blue Economy of Eastern Africa, Southern Africa and the Indian Ocean region (ES-SA-IO) “Ecofish” is financed by the 11th EDF Cross-Regional Initiative. The programme is managed by the EUD Mauritius and implemented by the IOC Secretariat in collaboration with the sub-regional development partners. It has a financial envelope of EUR 28 million over 62 months. Although the
ultimate beneficiaries of the programme are the 22 partner countries of the EA- SA-IO region, the entry points of the regional programme are the five Duly Mandated organisations [COMESA, EAC, IGAD, IOC and SADC], five Regional Fisheries Management Organizations and Regional Fisheries Bodies [IOTC, LTA, LVFO, SOIFA and SWIOFC] and other Development Partners such as the AU- IBAR, WBG, FAO and EFCA.

The Ecofish programme consists of three expected outcomes: Result 1 – Enhanced Policy and Institutional Frameworks; Result 2 - Improved Monitoring, Control and Surveillance (MCS) capacities and Result 3 – Call for Proposal for selective flagships for the sustainable and inclusive inland and marine small-scale fisheries. It is operationalized through 5 Work Plans that are managed directly [Call for Proposal and Several Cross-cutting components: Direct Grants; Service Contract for the provision of TAT and NKE, ad hoc financial audits and External Evaluations], semi-directly [LVFO and LTA Work Plans] and Indirectly [Marine Fisheries (IOC) Work Plan] by the EUD Mauritius. The participation of La Reunion/France as a bona fide member of the IOC in the programme enables the latter to mobilize alternate financial resources to boost the development capabilities of the SWIO partner countries.

The Marine Fisheries [IOC] Work Plan is a major component of the programme that is implemented by the IOC Secretariat. It represents about 34 % of the total funding. Besides the implementation of Result 1 and 2 in the maritime façade of the EA-SA-IO region, it runs the Centralized/Integrated Programme Management Unit [IPMU] of the Ecofish Programme.

In line with the big picture of the Ecofish Programme, the Result 1 undertake a series of strategic actions to enhance the operational capacities of the target regional economic and fisheries organizations for unleashing the socio-economic and ecological benefits of sustainable, inclusive and climate-smart marine fisheries in the region. More importantly, the spin-off effects of these initiatives must impact the national and local economies. Thus, recreational fisheries have been identified for deeper investigations as to their potential for countries of the EA SA and IO region.

1.4 CURRENT SITUATION IN THE SECTOR

The Ecofish Programme as a Cross-Regional Initiative regards the EA-SA-IO region a unified space for advancing regional socio-economic cooperation under the EU-ACP Agreement. Keeping in mind the diverse and complex features of the national economies particularly the marine fisheries in the region, the Ecofish Programme proposes a common but differentiated approach - as opposed to one-size-fits- all - for the implementation of its regional strategic actions. Besides Mauritius and Seychelles which
are two high-income economies, the remaining coastal ACP countries in the region are among the Least Developed, if not, the Fragile and Vulnerable States of the world.

The FAO website defines recreational fisheries as “fishing for reasons other than to satisfy essential nutritional needs and where fishing products are generally not sold or otherwise traded on markets”. The FAO Factsheet on Recreational Fisheries refers to the “complex socio-economic issue of the “unlimited” rights of indigenous people to catch fish in their spare time (a custom right often handed down through the generations) which is often inconsistent and even in direct conflict with modern-day fisheries management regimes that are usually enshrined in national legislation”. An international Expert Consultation convened in August 2011 by the FAO agreed on the first Global Guidelines on responsible recreational fisheries. The technical guidelines, which is acknowledged by the FAO Committee on Fisheries (COFI), support sustainable recreational fisheries by translating the relevant provisions of the FAO Code of Conduct for Responsible Fisheries (CCRF) into specific advice for sustainable recreational fisheries. The FAO Expert Consultation Report states that the guidelines cover all types of recreational fisheries and also cover all environments (marine, coastal and inland) in the global scope. They highlight ways towards achieving responsible and sustainable fisheries using a range of tools and approaches in managing recreational fisheries. The guidelines acknowledge and emphasize the potential benefits of recreational fisheries and their important contribution to maintaining aquatic biodiversity and conserving endangered species and aquatic ecosystems. Some experts have estimated that about 700 million people might be engaged in some form of recreational fishing, i.e. several millions of jobs worldwide. A significant opportunity cost to the small-scale fisheries is the sport diving tourism industry which is globally worth about US$ 8 billion per year. According to a recent study, the recreational fisheries represent about 1 to 5% of the global catch which is non-negligible on socio-economic and ecological grounds.

1.5 Related programmes and other donor activities

No other programmes or donor activities has been operational in the region with regards to recreational and ornamental fisheries for over a decade or so.

2.0 OBJECTIVE, PURPOSE AND EXPECTED RESULTS

The overall objective of the programme is “to enhance equitable economic growth by promoting sustainable fisheries in the EA-SA-10 region”. The specific objective is “to support sustainable management and development of fisheries in order to contribute to poverty alleviation, food and nutrition security while addressing climate change resilience and enhancing marine biodiversity”. It builds on the achievements, learning investments
and best practices of former programmes to enhance the sustainable management of the marine and inland fisheries resources and ecosystems to contribute

2  Katia Mireles Felizola Freire et al, 2020 - Estimating Global Catches of Marine Recreational Fisheries to the time-bound socio-economic and ecological aspirations of the UN-SDG 2030, which are captured in Transforming Africa 2030, No Poverty – No Hunger and Nobody is left behind through the emerging global Blue Economy Strategy.

Generally, recreational fisheries are associated with the coastal and eco-tourism industry. While this systemic sector is quite advanced in some countries of the region namely, Seychelles, Mauritius, Madagascar, Tanzania and Kenya, it is still nascent or inexistent in the others.

The recruited experts will carry out the following:

☐ a comprehensive situational analysis
☐ promote responsible and sustainable recreational fisheries as a non-negligible contributor to the maritime fisheries sector.
☐ explore the existing and potential business development models for promoting responsible alternative sustainable livelihoods and economic opportunities for the coastal fishing communities.
☐ explore the prospects for improving the economic conditions of the local fishers and their communities through diversification from traditional fishing activities
☐ explore the potential for complementary and/or alternative sustainable livelihood and economic opportunities for the fishing communities that can also contribute to reducing overfishing and unsustainable fishing practices in the local fisheries
☐ Aim at mapping and understanding the institutional and socio-cultural appendage and economic dimensions of the recreational or sport fishery activities as an extension or diversification within the coastal artisanal-tourism nexus.
☐ assess the development potentials of these derived economic activities related to the emerging ecotourism industry which is linked with the Marine Protected Parks/Areas
☐ aims at identifying such sustainable economic activities and opportunities as well as lessons learned and best practices to create awareness for their expansion and integration within a holistic and integrated Regional Marine Fisheries Strategy and Business Plan for the EA-SA-IO region.

These integrative approaches blend the sustainable management of the coastal fisheries and conservation of the biodiversity and is in alignment with the Blue Economy. However,
it acknowledged that the recreational fisheries associated with the eco-tourism activities in the region are not well-documented and there is a lack of adequate and reliable data to assess the socio-economic and ecological impacts in the local and national economy. The expected outcomes of this assignment would create an impetus for appropriate economic research in interaction with other strategic actions of the Ecofish Marine Fisheries Work Plan for enhancing informed policymaking; management strategies and governance in the region.

3.0 ASSUMPTIONS AND RISKS

3.1 ASSUMPTIONS UNDERLYING THE PROJECT

- Full cooperation from the national authorities with regards to data collection, meetings etc.
- Availability of accurate and up to date statistics
- No legal impediments specially with regards to the Covid 19 pandemic

3.2 RISKS

- Lockdown due to the Covid virus.
- Lack of collaboration/local travel restrictions with regards to data collection.
  
  There is no major risk involved as most of the work will be home-based.

4.0 SCOPE OF THE WORK/ TASKS

In keeping with the set objectives, the main activities of this assignment include the followings:

4.1 GENERAL

The studies will cover the EA, SA and IO countries as spelt out at section 1.1. The target groups will mainly be fishers and the fishing community, conservation and biodiversity groups, people involved in ecotourism etc.
4.2 SPECIFIC WORK

- Perform a comprehensive situational analysis of the recreational fishery in the coastal ACP countries of the EA-SA-IO region, including inter alia the existing national or sub-national policy, institutional and governance frameworks.

- Survey the different recreational fishing activities and their interactions with the coastal marine fisheries, tourism and environmental conservation sectors from a cross-sector perspective.

- Review the existing fisheries and socio-economic data of the recreational fishing activities, including the target fish stocks and provide expert advice on the development potentials for responsible and sustainable in the segments as complementary and/or alternative economic activities to the local fishing communities.

- Assess the availability and quality of the catch and socio-economic data to contribute to designing future data collection tools and technique, including sampling and surveys.

- Identify existing and potential recreational and eco-tourism activities that showcase the Successful, sustainable potential for diversification opportunities of interest to artisanal fishing communities.

- Describe briefly the operational structures or business models of the recreational or eco-tourism

- Identify key stakeholders and champions in the public and private sector as well as the Non- Governmental Organisations who are pushing for sustainable, inclusive coastal fisheries- recreational fisheries and eco-tourism and environmental stewardship at the local and national levels.

- Estimates the direct and indirect socio-economic impacts of recreational fishing activities in the local and national economies.

- Recommendations and Way forward to harness the socio-ecological opportunities for the sustainable development of recreational and eco-tourism activities with the involvement of the local fishing communities.

- Awareness building and policy guidance for promoting responsible and sustainable development recreational fisheries as a pathway for creating alternative livelihoods and economic opportunities for local fishing communities at the national and regional levels.
4.3 PROJECT MANAGEMENT

The assignment is managed by the Ecofish Marine Fisheries Programme Estimates which is implemented by the Indian Ocean Commission in accordance to the EU financial Rules and Procedures. The assistance from the Lead Experts and the National Focal Points in the respective countries has been sought.

5.0 LOGISTICS AND TIMING

5.1 LOCATION

The study will be carried out by National Experts in the 11 countries of the EA, SA & IO region, namely Mauritius, Seychelles, Madagascar, Comoros, Kenya, Tanzania, Mozambique, Djibouti, Somalia, Eritrea and Sudan. These Experts will be under the supervision of the Lead Expert and the IPMU.

While coping with the preventive and precautionary restrictions imposed under the sway of the COVID 19 pandemic, both studies (Recreational & Ornamental) will be home-based and rolled out through extensive desktop research and virtual consultations with the Ecofish national focal points, key public and private stakeholders and champions of the coastal recreational fishery and Ornamental activities in the regional partner countries.

5.2 START DATE & PERIOD OF IMPLEMENTATION OF TASKS

It is expected to start the study by Mid-October and complete the work by November 2020. The final draft may need some overhauling and final completion of the national and regional chapters will be completed by the first week of December if not earlier.

The duration of the assignment is tentatively two calendar months from the date of signature of the contracts. The Lead Experts (both recreational & Ornamental fisheries) will be allocated twenty (20) working days each (with a gap of 10 days between start dates of the studies). Each National Expert will be given 8 working days for the recreational fisheries study and 7 working days for the ornamental fisheries study. Data collection may be carried out simultaneously for both studies. However, all reports will have to be submitted to the respective lead expert for compilation of the regional report. Note that the lead experts will also spend time collecting info to also produce two national reports.
(Recreational & Ornamental) for their countries of origin over and above extra duties assigned to them.

6. REQUIREMENTS

Two (2) categories of Experts will be required to conduct this assignment namely:

i) One Lead experts (recreational fisheries) with regional and international experience on the subject matter. The latter will be responsible for the strategic planning, coordination, monitoring and control as well as consolidation of the national reports. The Lead expert will submit (1) the consolidated regional report on recreational fisheries, (2) the national report on recreational fisheries and (3) the national report on ornamental fisheries. Note that the Lead Expert will also act as the national consultant for his country of residence.

ii) Nine (9) National experts who will be responsible for implementing the studies (both recreational & ornamental separately) at the national and sub-national level (including any islands/provinces falling under the national jurisdiction) under the technical guidance of the Lead Expert.

The key professional qualifications and experience of these two categories of experts are enumerated below:

6.1 (A) LEAD EXPERT

Qualifications

- At least a degree in Fisheries Science, Economics, Management, Development Economics, Data Science or related field.

Professional Experience

- Small Scale fisheries Diversification, Specialist with demonstrated experience [at least 7 years] in business development/disruptive innovation in coastal marine fisheries/well versed in recreational fisheries;

Specific experience

- Proficiency in the economics of recreational fisheries, ecotourism from the perspectives of sustainable coastal fishing communities;

- Experience working with the ACP coastal states of the EA-SA-I0 region
Fluency in English and working knowledge in French;
Working experience with EU programmes/Project will be an advantage.

6.1 (B) NATIONAL EXPERTS (9)

Qualifications
At least a degree in Fisheries Science, Economics, Management, or related field.

Professional experience
Fisheries experts with adequate experience at national level [at least 5 years] in sustainable diversification in the integrated and sustainable coastal marine fisheries and environment conservation management;

Specific experience
Knowledgeable in the economics of recreational fisheries, ecotourism for promoting alternative sustainable livelihood for the local fishing communities at the national and/or regional levels;
Experience working with the ACP coastal states of the EA-SA-IO region
Fluency in English and working knowledge in French;
Working experience with EU programmes/Project will be an advantage.

6.1 (C) COMMON ATTRIBUTES

Good writing skills, policy guidance and publications;
Interpersonal communication, networking and team-spirit;
Working on tight schedules and timely delivery of reports;
Conversant in ITC tools, including teleworking, desktop research and virtual meeting devices.

6.2 OFFICE ACCOMMODATION

NA
6.3 FACILITIES TO BE PROVIDED BY THE CONTRACTOR

NA

6.4 EQUIPMENT

The experts will use their laptops and any other data capturing equipment deemed necessary for the execution of the assignment.

7. REPORTS

7.1 REPORTING REQUIREMENTS

The expected output of the assignment is a comprehensive assessment of the status and potentials of coastal recreational fisheries in the ACP countries of the EA-SA(IO region. It provides the necessary inputs, foresighted thinking, business models, lessons learned and best practices for the formulation of a regional framework for the sustainable development of the segment from the socio-economic perspectives of the local fishing communities.

The key milestones and deliverables of the intervention are as follows:

- A draft inception report with 5 working days to demonstrate a clear understanding of the scope and theory of change of the assignment, including a detailed work plan, schedule, a harmonized table of Contents for the final draft report (deliverables) as per the contracted terms of reference;
- A first draft report of respective national experts (11);
- A final report of each national expert after receiving feedback from the Lead expert and IPMU;
- A first consolidated draft of the regional report by the Lead expert;
- A final consolidated report after receiving and integrating feedbacks from the IPMU, National experts and inputs from the virtual regional validation meeting;
- A power point presentation of the main findings of the regional report including the Challenges, recommendation and way forward.
7.2 SUBMISSION AND APPROVAL OF REPORTS
The awarded consultants will work under the supervision of the Fisheries Management Specialist of the IPMU and the latter has the responsibility for final approval of the reports. However, the Lead Expert will be responsible for the technical coordination and consolidation of the works of the national consultants.

8.0 MONITORING AND EVALUATION

8.1 DEFINITION OF INDICATORS
The main indicators for the lead experts would be the inception reports, draft Final reports, final reports, Policy guidance and virtual meeting to validate the report. For National experts’ indicators would be the inception report, draft Final reports and final reports.

8.2 SPECIAL REQUIREMENTS

9.0 OTHER TERMS AND CONDITIONS

9.1 CONTRACTING PROCEDURES
The assignment is managed by the Ecofish Marine Fisheries Programme Estimates which is implemented by the Indian Ocean Commission in accordance to the EU financial Rules and Procedures. The programme will apply its most competitive rate to the different categories of experts involved.

9.2 COMMUNICATION AND VISIBILITY
The EU Communication and Visibility requirements will apply to this assignment, including all reports and material produced.
9.3 PROPRIETORSHIP RIGHTS

The ownership rights of the data and other digital/physical materials including intellectual property rights produced by the assignment will belong exclusively to the Ecofish Programme.

9.4 MODE OF OPERATION

The Short-Term Experts will work remotely from their homes and will ensure frequent communication with among them. Most interviews and meetings will be carried out virtually. Due to the COVID 19 pandemic threats, trans-boundary travels are not foreseen in the assignment.

9.5 GENDER EQUALITY

The Ecofish Programme promotes gender equity and therefore female consultants are encouraged to participate in the assignment.

9.6 INSURANCE COVER

The experts will be responsible for their own medical and life insurance cover for the duration of the assignment.

10. VALIDITY

The closing date and time for submission of application letter and CV (EU Format) and other requested documents is the 25th September 2020. Applications received after that date/time will not be considered. Note that due to the Covid Pandemic all correspondence with the Programme Management Unit will be strictly on digital format (e-mail).
ANNEX 2: FIGURES

Figure 1: Number of years engage in recreational and sport fisheries

Figure 2: Level of exploitation of commonly targeted species by sport and recreational fisheries
**Figure 3**: Level of pricing in recreational and sport fisheries in the ESA-IO region

**Figure 4**: Likelihood of fishing and non-fishing alternative income sources
Figure 5: Compliance to national, regional and international regulatory frameworks

Figure 6: Percentage of operations within the sport and recreational fisheries
# ANNEX 3: WORK PLAN

This section contains a timetable for the activities with tentative timelines for key events, tasks, deliverables and milestones.

## Table 2: Timing, sequence and duration of the proposed tasks and deliverables

<table>
<thead>
<tr>
<th>Activities</th>
<th>PERIOD</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Week One (10days)</td>
</tr>
<tr>
<td>Conduct a virtual planning meeting to draft inception report</td>
<td></td>
</tr>
<tr>
<td>Hold inception meeting</td>
<td></td>
</tr>
<tr>
<td>A virtual meeting with Experts to commence the data mining and drafting of country reports</td>
<td></td>
</tr>
<tr>
<td>10 virtual meetings, WhatsApp conversations and email communication with stakeholders on thematic areas (Note: each meeting per country with provisions for additional meetings)</td>
<td></td>
</tr>
<tr>
<td>Consultative virtual meeting with key informants (Nina and Nelly for selected countries)</td>
<td></td>
</tr>
<tr>
<td>Technical meeting to review National Reports on thematic areas and commence the regional draft report</td>
<td></td>
</tr>
<tr>
<td>Task</td>
<td>Status</td>
</tr>
<tr>
<td>----------------------------------------------------------------------</td>
<td>--------</td>
</tr>
<tr>
<td>Consultant (Dr. Nina Wambiji and Dr. Nelly Isigi Kadagi) to conduct virtual meeting to finalize on National reports</td>
<td></td>
</tr>
<tr>
<td>Dr. Nelly Isigi Kadagi) to consolidate regional first draft report</td>
<td></td>
</tr>
<tr>
<td>Revision of the regional draft report after comments (Dr. Nelly Isigi Kadagi)</td>
<td></td>
</tr>
<tr>
<td>Develop a PowerPoint presentation of main findings of the regional report</td>
<td></td>
</tr>
<tr>
<td>Final outputs – submission of report and other deliverables (Dr. Nelly Isigi Kadagi)</td>
<td></td>
</tr>
</tbody>
</table>
Table 3: Indicative Logical Matrix

LOGIFRAME FOR THE PROPOSED STUDY ON RECREATIONAL FISHERIES
IN THE EA-SA-IO REGION

REFERENCE: COI/Ecofish/AO/2020/036

<table>
<thead>
<tr>
<th>RESULTS CHAIN</th>
<th>INDICATORS</th>
<th>SOURCES AND MEANS OF VERIFICATION</th>
<th>ASSUMPTIONS/ RISKS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Overall goal</td>
<td>To enhance sustainable and inclusive small-scale marine fisheries rehabilitation and modernisation strategy as well as an economically viable business plan for the EA-SA-IO region</td>
<td>Socio-economic benefits and sustainable expansion of the regional fisheries sector&lt;br&gt;Number of people and entities benefiting from the support to develop recreational and sport fisheries&lt;br&gt;Best practices for sustainable recreational fisheries that are not a one-size-fits-all</td>
<td>National fisheries and economic data and reports&lt;br&gt;Technical reports&lt;br&gt;Results of sampling and surveys&lt;br&gt;Feedback on recreational and tourism activities</td>
</tr>
</tbody>
</table>


<table>
<thead>
<tr>
<th>Specific objectives: Outcomes</th>
<th>Promote responsible and sustainable recreational fisheries as a non-negligible contributor to the maritime fisheries sector.</th>
<th>Number of investment opportunities for sustainable recreational and sport fisheries</th>
<th>National and regional fisheries and socio-economic reports</th>
<th>Buy in from local fishing communities</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Number of people directly involved in the recreational fishery</td>
<td>Technical reports</td>
<td>Support from local and international investors</td>
<td>Support from stakeholders and National Experts</td>
</tr>
<tr>
<td></td>
<td>Development of sport fishing centres</td>
<td>National Reports to IOTC</td>
<td>Developed licensing framework that support inclusive recreational fisheries</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Explore the existing and potential business development models for promoting responsible alternative sustainable livelihoods and economic opportunities for the coastal fishing communities.</td>
<td>Number of licensed sport and recreational fishing operators</td>
<td>Support from stakeholders and National Experts</td>
<td>No delays in response due to COVID-19</td>
</tr>
<tr>
<td></td>
<td>Number of training conducted on testing business models</td>
<td>Results of the SWOT analysis – on status, challenges and opportunities for recreational</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Explore the prospects for improving the economic conditions of the local fishers and</td>
<td>Adequate time to ensure availability of stakeholders and experts on</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Direct and indirect socio-economic and cultural impact from sport and recreational</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>their communities through diversification from traditional fishing activities</td>
<td>fisheries</td>
<td>fisheries <strong>DPSIR</strong> (Drivers, Pressures, State, Impact, and Response) model report</td>
<td>thematic areas</td>
<td></td>
</tr>
<tr>
<td>---</td>
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<td></td>
</tr>
<tr>
<td>Explore the potential for complementary and/or alternative sustainable livelihood and economic opportunities for the fishing communities that can also contribute to reducing overfishing and unsustainable fishing practices in the local fisheries</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Outcomes</strong></td>
<td>Institutions and countries are strengthened to develop and management sustainable recreational and sport fisheries</td>
<td>Number of key stakeholders, public and private sector National and regional reports Data reported to IOTC Monitoring</td>
<td>Support from stakeholders and National Experts No delays in response due to COVID-19</td>
<td></td>
</tr>
<tr>
<td>Strengthened capacity to promote recreational fisheries as alternative business model for local fishing communities</td>
<td>Number of diversified opportunities for artisanal fishing communities</td>
<td>Support from stakeholders and National Experts No delays in response due to COVID-19</td>
<td></td>
<td></td>
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<tr>
<td>---</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Enhanced institutional, regional and local frameworks to reduce to reduce overfishing</td>
<td>Operational structures and frameworks Socio-ecological opportunities for sustainable development</td>
<td>Involvement of multi-sectors Support from stakeholders and National Experts No delays in response due to COVID-19</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
ANNEX 5: THEMATIC AREAS WITH DETAILED SURVEY INSTRUMENT

<table>
<thead>
<tr>
<th>A. Ecological</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. History and current extent of the sport/recreational/ornamental fisheries</td>
</tr>
<tr>
<td>2. What are the main species targeted?</td>
</tr>
<tr>
<td>3. What is the exploitation level for the target species?</td>
</tr>
<tr>
<td>Abundant (0); less abundant (1); declining (2); depleted (3); collapsed (4)</td>
</tr>
<tr>
<td>4. Size of fish</td>
</tr>
<tr>
<td>a) What is the mean size of the main species caught in the fishery?</td>
</tr>
<tr>
<td>b) How has the mean size changed over the years?</td>
</tr>
<tr>
<td>Mean size over the year: rapid increased (0); little increase (1); no change (2); fluctuating (3); little decrease (4); rapid decrease (5)</td>
</tr>
<tr>
<td>5. What is the level of discards from the fishery?</td>
</tr>
<tr>
<td>Very low 0% to 10% (0); low 10% to 20% (1); medium 20% to 40% (2); high 44% (3); very high 100% (4)</td>
</tr>
<tr>
<td>6. Are there other documented or perceived environmental impacts of the fishery?</td>
</tr>
<tr>
<td>7. Bycatch - Percentage of bycatch in the fishery - juveniles of the target species</td>
</tr>
<tr>
<td>8. Range Collapse - Assesses if there is evidence of geographic range reduction of the fish population in the past 10 years, and/or loss of sub-populations within an area (indicator of future range collapse)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>B. Economic</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. How would you rate the pricing in the fishery? (E.g., per fishing trip, sale of different species</td>
</tr>
<tr>
<td>a. Price: Very high than average (0); high than average (1); equal to average (2); less than average (3)</td>
</tr>
<tr>
<td>2. Is the fishery reliant on subsidies?</td>
</tr>
<tr>
<td>a. Subsidy No (0); somewhat (1); large subsidies (2); heavily reliant (3); almost completely reliant on subsidies (4)</td>
</tr>
<tr>
<td>3. What is the % total family income from the fishery?</td>
</tr>
<tr>
<td>a. Fishing income Fishing income as % of total family income: 0–10% (3); 10–50% (2); 50–100% (1)</td>
</tr>
</tbody>
</table>
4. Where are the fish species sold?
   a. Market is principally: local (0); regional (1); national (2); international (3)

5. What is the level of landings from the fishery?
   a. Landings Much more than average (0); more than average (1); equal to average (2); less than average (3)

6. Rate the average fisheries GDP obtained from the fishery
   a. Fisheries GDP Very high (0); high (1); medium (2); low (3)

7. How would you rate the average wage from the fishery?
   a. Average wage Much more (0); more (1); the same (2); less (3); much less (4)

8. How would you rate the availability of alternative sources of income? Many other source of livelihood (0); some source (1); few source (2); very few source (3); none (4)

9. What proportion of the fishery contributes to the presence of employment opportunities?
   a. Sector employment 10% (0); 10-20% (1); 20-30% (2); 430% (3)

10. Who are the actors involved in the fishery? (value chain*) What are the different market levels? (for sport fishery consider the origin of fishing clients)

C. Social

1. How are the activities carried out within the fishery?
   Socialization of fishing: Fishers work as: individual (2); families (1); community groups (0)

2. How would you rate the growth of the local fishing community over the past 5 years? <10% (0); 10+/- 20% (1); 20-30% (2); >30% (3)

3. What is the education level for the fishers?
   Madrasa (0); Primary (1); Secondary (2): College (3); University (4)

4. Do you encounter any conflict within the fishery? Almost none 0-10% (0); some 11-40% (1); lots 41-60% (2); a great amount 61-100% (3)

5. How much indigenous and local ecological knowledge do the participants have about the fishery? None (3); some (2); a lot (1); a great deal (0)

6. How much do the fishers influence the social structure? A great deal (0); a lot (1); some (2); none (3)

7. How would you rate the residence quality? Excellent (0); good (1); average (2); poor (3)

8. Are there patterns of kin participation in this fishery? Almost none (3); very few relatives (2); some relatives (1); fishery is mainly kin (0)

9. Are there any overlaps between this fishery and other fisheries? If yes, how? None (0); somewhat (1); A lot (3)
### D. Management

1. Are there any Fisheries acts or rules and regulations governing this specific fishery in the country?
2. Fisheries management plan exist for the fishery
3. Are there any restrictions to access this fishery? Effective measures to access restriction (0); not very effective measures (1); free access or anyone can access (2)
4. What is the willingness of fishers to comply with the regulations? High willingness (0); some willingness (1); little willingness (2); no willingness (3)
5. Are there any traditional management regimes for this fishery? Many (0); some (1); no (2)
6. Does the fishery have any seasonal closures a) Yes, b) No If yes, how effective are they? Highly effective and fully practicing (0); effective and somewhat practicing (1); little effective and little practicing (2); not effective and not practicing (3)
7. What is the effectiveness of vessel registration? Highly effective (0); effective averagely (1); little effective (2), not effective/no registration (3). Who is mandated to register them?
8. Does this fishery have co-management systems?
9. What is the level of stakeholder participation in co-management of the fishery? All the stakeholders participate (0); some stakeholders participate (1); no stakeholder participation (2)
10. Are there conflict resolution mechanisms? a) Yes, b) No How effective are they? Very effective mechanism exists (0); exists, but not very effective (1); no mechanism exists (2)
11. What Research and Development support for fisheries management is available from the Government? If yes, how effective? Effective and highly utilized (0); effective but not utilized (1); does not exist (2)
12. Does the country comply with the Code of Conduct for Responsible Fisheries (CCRF) If yes, how effective is the implementation? Effectively implemented (0); somewhat effective (1); not effective (2); does not implemented (3)

### E. Opportunities

1. What opportunities exist for the development of this fishery in your country?
2. Is the supportive infrastructure adequate? If not, what are your suggestions?
3. Are there any planned actions to incorporate the fishery in the Blue economy agenda / socio-economic development?
4. Who else involved in this fishery would you recommend that we speak to?
### F. Challenges and recommendations

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>What challenges are currently being faced in this fishery along the value chain?</td>
</tr>
<tr>
<td>2.</td>
<td>What recommendations do you propose to develop this fishery to be sustainable?</td>
</tr>
</tbody>
</table>
## ANNEX 6: LIST OF CONTACTS

Table 4: Organizations and persons contacted at country and regional level

<table>
<thead>
<tr>
<th>Name</th>
<th>Institution</th>
<th>Contact details</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mr. Ahmed Darar Djibril</td>
<td>Océanographe biologiste Djibouti</td>
<td><a href="mailto:djidarar@hotmail.com">djidarar@hotmail.com</a> Cell: +253 77 84 57 76</td>
</tr>
<tr>
<td>Mr. Ibrahim Chehem Daoud</td>
<td>Député National</td>
<td><a href="mailto:Ibrahimchehem@outlook.fr">Ibrahimchehem@outlook.fr</a></td>
</tr>
<tr>
<td>Mr. Seid Mohamed Abrar</td>
<td>Eritrea</td>
<td><a href="mailto:seidm2000@gmail.com">seidm2000@gmail.com</a> Cell : +291 1125 955</td>
</tr>
<tr>
<td>Mr. Rodrick Kundu</td>
<td>Deputy Director - Fisheries &amp; Blue Economy, Kenya</td>
<td><a href="mailto:rodkundu@yahoo.com">rodkundu@yahoo.com</a> Cell: +254 712 978 816</td>
</tr>
<tr>
<td>Mr. Estela Mausse</td>
<td>Director of Fisheries Mozambique</td>
<td><a href="mailto:smausse@yahoo.com.br">smausse@yahoo.com.br</a> Cell: (+258) 82 59 27 300</td>
</tr>
<tr>
<td>Mr. Peter K Mwandikwa</td>
<td>Principal Fisheries and Blue Economy Officer</td>
<td><a href="mailto:kimwand@yahoo.com">kimwand@yahoo.com</a> Cell: +254 716 016 267</td>
</tr>
<tr>
<td>Mr. Sitoe Samuel</td>
<td>Head of Fisheries Monitoring National Fisheries Administration (ADNAP), Ministry of Sea, Inland Waters and Fisheries, Rua Consiglieri Pedroso 347 4th Floor, Maputo</td>
<td><a href="mailto:ssitoe3@gmail.com">ssitoe3@gmail.com</a> Tel.: +258 843172930</td>
</tr>
<tr>
<td>Mr. Mohamoud Sh. Abdullahi</td>
<td>Ministry of Fisheries and Marine Resources, Radio Mogadishu Road, Wardhiigley, Mogadishu, Somalia</td>
<td></td>
</tr>
<tr>
<td>Name</td>
<td>Organization</td>
<td>Contact Information</td>
</tr>
<tr>
<td>-------------------------------------------</td>
<td>------------------------------------------------------------</td>
<td>--------------------------------------------</td>
</tr>
<tr>
<td>Abdirahman Mohamud Osman</td>
<td>Somalia</td>
<td><a href="mailto:aosman.mfmr@gmail.com">aosman.mfmr@gmail.com</a></td>
</tr>
<tr>
<td>Dr. Randah Eltyab Babiker</td>
<td>El Kalakla Street, Abu Hamama Station, Khartoum South, Sudan</td>
<td><a href="mailto:randah1@live.com">randah1@live.com</a>, Cell: +249 912 201 987</td>
</tr>
<tr>
<td>Mr. Magese Emmanuel Bulayi</td>
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</tr>
<tr>
<td>Dr. Etienne Bemanaja</td>
<td>Madagascar</td>
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</tr>
<tr>
<td>Mr. Ratsimanarisoa Njaka</td>
<td>Madagascar</td>
<td><a href="mailto:njakka@gmail.com">njakka@gmail.com</a></td>
</tr>
<tr>
<td>Mrs. Meera Koonjul</td>
<td>Assistant Director of Fisheries, Ministry of Blue Economy,</td>
<td><a href="mailto:mkoonjul@govmu.org">mkoonjul@govmu.org</a></td>
</tr>
<tr>
<td></td>
<td>Marine Resources, Fisheries, and Shipping, Albion Fisheries</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Research Centre</td>
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</tr>
<tr>
<td>Mr. Subhas Bauljeewon</td>
<td>Ag. ASST. Director) Fisheries, Mauritius</td>
<td><a href="mailto:sbauljeewon@govmu.org">sbauljeewon@govmu.org</a></td>
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<tr>
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<td>CEO of Seychelles Fishing Authority, Seychelles</td>
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<td>Mr. Roy Clarisse</td>
<td>Principal Secretary for the Fisheries department, Seychelles</td>
<td><a href="mailto:rclarisse@gov.sc">rclarisse@gov.sc</a></td>
</tr>
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<tr>
<td></td>
<td>National Focal Point-Comoros</td>
<td></td>
</tr>
<tr>
<td>Mr. M. Adbouchakour Mohamed Abderemanene</td>
<td>Heads of Applied Research on Fisheries, NFP/ CBD, Comoros</td>
<td><a href="mailto:abdouchamed@yahoo.fr">abdouchamed@yahoo.fr</a></td>
</tr>
</tbody>
</table>
# ANNEX 7: PROJECT DELIVERABLES

<table>
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<th>Output</th>
<th>Preliminary topics/Table of Contents</th>
<th>Responsible person(s)</th>
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| Draft inception report | 1. Background information on recreational and sport fisheries in the ESA-IO region  
2. Rationale for proposed work  
3. Overview of countries  
4. Methodology: Activities and methods  
5. Sample of questions for key informants (conversations through virtual platforms such as Zoom meetings, interviews, observational studies)  
6. Expected outputs  
7. Target groups  
8. Work Plan and deadlines | Expert 1 and 2 |
| Draft national report for respective countries | 1. Background information on recreational fisheries (country specific)  
2. The methodology for preparation of the report  
3. Review of the status of recreational fisheries (activities, species, catch, landings, and challenges) (country specific)  
   - Recreational Catch and Release (if applicable)  
   - Socio-economic importance on recreational fisheries  
   - Available operational structures and business models  
   - Governance of recreational fisheries  
   - Major challenges and threats to recreational fisheries  
   - Explore the viability and sustainability of recreational fishery development as an alternative source of livelihood  
   - Explore transparent and participatory approaches to all forms of data-gathering  
   - Determine best practices to create awareness for expansion and integration in Regional | Collaborative Expert 1 and 2 |
## Marine Fisheries Strategy

3. **Role of recreational fisheries in socio-economic security**
   - Related recreational fishing activities

4. **Recommendations on opportunities for sustainable development and management of recreational fisheries**

5. **Overall conclusions and recommendations**
   - Monitoring and evaluation

6. **References**

7. **Database of key contact persons**

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<th>Dr. Nelly Isigi Kadagi</th>
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## ANNEX 8: STANDARDIZED TABLE OF CONTENT FOR FINAL REGIONAL REPORT

### LIST OF ABBREVIATIONS AND ACRONYMS

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<td>PRÉFACE</td>
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<tr>
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5.7 Sudan

5.8 Seychelles

5.9 Madagascar

5.10 Comoros

5.11 Mauritius

6.0 CONCLUSION, RECOMMENDATIONS AND WAY FORWARD

Annex 1: Work Plan

Annex 2: Logical Framework

Annex 3: Thematic Areas with detailed survey instrument

Annex 5: List of Contacts

Annex 6: Project Deliverables

Annex 7: Standardized Table of Content for Final Regional Report

Annex 8: Notification Email to National Focal Points and Other Stakeholders (English and French)

Annex 9: Survey Introduction to Stakeholders (English and French)

Annex 10: List of Reports, Documents and Literature Reviewed
ANNEX 9: NOTIFICATION EMAIL TO NATIONAL FOCAL POINTS AND OTHER STAKEHOLDERS (ENGLISH & FRENCH)

Dear Sir/ Madam,

We are running a study on sport and recreational fisheries which is an important component of the Indian Ocean Commission (IOC)- ECOFISH Programme on "Enhancing equitable economic growth by promoting sustainable fisheries in the Eastern and South Africa and Indian Ocean (EA-SA-IO) region" for marine recreational fisheries. The study is led by me Dr. Nina Wambiji and Dr. Nelly Kadagi in collaboration with IOC. Please see the link to the survey (https://forms.gle/MmNGwFjzRb4AdLLr6).

The purpose of this study is to obtain feedback from a diverse group of stakeholders on the importance of the sport and recreational fisheries, which is critical for livelihoods and ensuring sustainable use and management.

Specifically, we are engaging recreational and sportfishing stakeholders in 9 countries across the Eastern, Southern and Indian Ocean regions to (1) understand the current and historical catch dynamics of these fisheries, (2) the challenges and opportunities of these fisheries as they are directly linked to the livelihoods and how these linkages contribute to sustainable use, development, and ocean governance.

Gaps in information on recreational and sport fisheries in the ESA-IO region have long been a challenge that continues to limit the ability of countries to define strategies for sustainable resource use and management of these sectors. The inadequate information and understanding of the recreational and sport fishery component further undermine the implementation of collective measures to address the challenges and develop pathways to conserve the species whilst enhancing livelihoods.

Some key points:
1. This questionnaire comprises 9 sections each addressing catch dynamics, socio-economic, management and the future of sport fisheries
2. It will take 30-40 mins.
3. Your participation in the survey is voluntary. We would like to note that all data obtained from this survey will be confidential including any information that can identify you.

Please respond by 13th June 2021.

Thank you for your time and feedback.

Regards,

***************

Nina N. Wambiji (Ph.D)
Assistant Director (Fisheries),
Bonjour Monsieur / Madame,

J’espère que vous allez bien. (I hope you are well).

Bâsé sur votre expertise et votre expérience dans la pêche sportive et récréative, nous demandons votre soutien pour fournir des commentaires pour l’étude en cours.

Objectif: L’étude sur la pêche sportive et récréative est un élément important du Programme ECOFISH de la Commission de l'océan Indien (COI) sur "L’amélioration d’une croissance économique équitable en promouvant une pêche durable dans la région de l’Afrique de l’Est et de l’Afrique du Sud et de l’océan Indien (EA-SA-IO)" pour la pêche récréative marine. L’étude est dirigée par le Dr Nina Wambiji et le Dr Nelly Kadagi en collaboration avec l’OC.

Veuillez consulter le lien vers l’enquête (https://forms.gle/ymFwRhNdNxa47rXr6)...

Le but de cette étude est d’obtenir des commentaires d’un groupe diversifié d’intervenants sur l’importance de la pêche sportive et récréative, qui est essentielle pour les moyens de subsistance et assurer l’utilisation et la gestion durables.

Nous espérons atteindre diverses parties prenantes, notamment des officiers gouvernementaux et intergouvernementaux, des capitaines, des équipages, des pêcheur, des organisations non gouvernementales, des établissements d’enseignement et des hôtels de pêche sportive associés à ces pêches.

Quelques points clés:

1. Ce questionnaire comprend 10 sections traitant chacune de la dynamique des captures, du socio-économique de la gestion et de l’avenir de la pêche sportive.

2. Cela prendra 20-30 minutes.

3. Votre participation au enquête est volontaire. Nous tenons à noter que toutes les données obtenues à partir de l’enquête seront confidentielles, y compris toute information pouvant vous identifier.

Merci de répondre avant le 26 Juin 2021.

Merci pour votre temps et vos commentaires.

Cordialement,

*************

Nina N. Wambiji (Ph.D)
Assistant Director (Fisheries),
Sport and Recreational Fisheries Survey

Based on your expertise and experience in the Sport and Recreational Fisheries, we request your support in providing feedback for the ongoing study.

Objective: The sport and recreational fisheries study is an important component of the Indian Ocean Commission (IOC)-ECOFISH Programme on “Enhancing equitable economic growth by promoting sustainable fisheries in the Eastern and South Africa and Indian Ocean (EA-SA-IO) region” for marine recreational fisheries. The study is led by Dr. Nina Wambiji and Dr. Nelly Kadagi in collaboration with IOC.

The purpose of this study is to obtain feedback from a diverse group of stakeholders on the importance of the sport and recreational fisheries, which is critical for livelihoods and ensuring the sustainable use and management. Specifically, we are engaging recreational and sportfishing stakeholders in 9 countries across the Eastern, Southern and Indian Ocean regions to:

1. Understand the current and historical catch dynamics of these fisheries,
2. The challenges and opportunities of these fisheries as they are directly linked to the livelihoods and how these linkages contribute to the sustainable use, development and ocean governance.

Gaps in information on recreational and sport fisheries in the ESA-IO region have long been a challenge which continues to limit the ability of countries to define strategies for sustainable resource use and management of these sectors. The inadequate information and understanding of the recreational and sport fishery component further undermines the implementation of collective measures to address the challenges, and develop pathways to conserve the species whilst enhancing livelihoods.

We hope to reach out to diverse stakeholders including government and intergovernmental officers, captains, crews, fishers, Non-governmental organizations, learning institutions, sport fishing hotels associated with these fisheries.

Some key points:
1. This questionnaire comprises 9 sections each addressing catch dynamics, socio-economic, management and the future of sport fisheries
2. It will take 20-30 mins.
3. Your participation in the survey is voluntary. We would like to note that all data obtained from this survey will be confidential including any information that can identify you.

Please email any clarifications or questions regarding the survey to: Nelly Kadagi (Email: nellykadagi@gmail.com) or Nina Wambiji (Email: nwambiji@gmail.com).
Sport and Recreational Fisheries Survey

ENQUÊTE SUR LA PÊCHE SPORTIVE ET RÉCRÉATIVE

Basé sur votre expertise et votre expérience dans la pêche sportive et récréative, nous demandons votre soutien pour fournir des commentaires pour l'étude en cours.

Objectif: L'étude sur la pêche sportive et récréative est un élément important du Programme ECOFISH de la Commission de l'océan Indien (COI) sur "L'amélioration d'une croissance économique équitable en promouvant une pêche durable dans la région de l'Afrique de l'Est et de l'Afrique du Sud et de l'océan Indien (EA-SA-IO)" pour la pêche récréative marine. L'étude est dirigée par le Dr Nina Wambiji et le Dr Nelly Kadagi en collaboration avec l'OC.

Le but de cette étude est d'obtenir des commentaires d'un groupe diversifié d'intervenants sur l'importance de la pêche sportive et récréative, qui est essentielle pour les moyens de subsistance et assurer l'utilisation et la gestion durables. Plus précisément, nous mobilisons les acteurs de la pêche récréative et sportive dans 9 pays des régions de l'Est, du Sud et de l'océan Indien pour:

(1) comprendre la dynamique actuelle et historique des captures de ces pêcheries,
(2) les défis et les opportunités de ces pêcheries car elles sont directement liées aux moyens de subsistance et comment ces liens contribuent à l'utilisation durable, au développement et à la gouvernance des océans.

Les lacunes en matière d'information sur la pêche récréative et sportive dans la région de l'ESA-IO constituent depuis longtemps un défi qui continue de limiter la capacité des pays à définir des stratégies d'utilisation et de gestion durables des ressources de ces secteurs. L'information et la compréhension inadéquates de la composante pêche récréative et sportive compromettent davantage la mise en œuvre de mesures collectives pour relever les défis et développer des voies de conservation de l'espèce tout en améliorant les moyens de subsistance.

Nous espérons atteindre diverses parties prenantes, notamment des officiers gouvernementaux et intergouvernementaux, des capitaines, des équipages, des pêcheurs, des organisations non gouvernementales, des établissements d'enseignement et des hôtels de pêche sportive associés à ces pêches.

Quelques points clés:
1. Ce questionnaire comprend 10 sections traitant chacune de la dynamique des captures, du socio-économique, de la gestion et de l'avenir de la pêche sportive
2. Cela prendra 20-30 minutes.
3. Votre participation au sondage est volontaire. Nous tenons à noter que toutes les données obtenues à partir de ce sondage seront confidentielles, y compris toute information pouvant vous identifier.

Veuillez envoyer toute clarification ou question concernant le sondage à: Nelly Kadagi (Email: nellykadagi@gmail.com) ou Nina Wambiji (Email: nwambiji@gmail.com).
ANNEX 11: LIST OF REPORTS, DOCUMENTS AND LITERATURE REVIEWED

https://www.unido.org/sites/default/files/2017-03/MTE_Sudan_Marine_fishery_Red_Sea_State_130130_2016_0.pdf

https://www.google.com/url?q=https://core.ac.uk/download/pdf/10192949.pdf&sa=D&source=editors&ust=1617055204078000&usg=AOvVaw3QXwMAaq0Y6ZP0-d1orCXZ

https://shabait.com/2021/02/10/the-importance-of-fisheries-to-eritrea-s-national-development/


https://www.unwto.org/international-tourism-and-covid-19

https://seyccat.org/about-us/


