



Africa Blue Economy Strategy

(Annex 1: Fisheries, aquaculture, conservation and sustainable aquatic ecosystems in the context of Africa Blue economy)

All rights reserved. Reproduction and dissemination of material in this information product for educational or other non-commercial purposes are authorized without any prior written permission from the copyright holders provided the source is fully acknowledged. Reproduction of material in this information product for resale or other commercial purposes is prohibited without written permission of the copyright holders.

Applications for such permission should be addressed to:

The Director
African Union – Inter-African Bureau for Animal Resources (AU-IBAR)
Kenindia Business Park
Museum Hill, Westlands Road
P.O. Box 30786-00100,
Nairobi, KENYA.
or by e-mail to: ibar.office@au-ibar.org

ISBN: 978-9966-077-36-3

© AU-IBAR 2019

Citation: AU-IBAR, 2019. Annex I. Fisheries, aquaculture, conservation and sustainable aquatic ecosystems in the context of Africa Blue Economy. Nairobi, Kenya

October 2019

Table of Contents

Acronyms	iv
Acknowledgements	vi
Context	i
Outlook	5
Challenges	8
<i>Strategic Challenges</i>	8
<i>Technical Challenges</i>	14
Strategic Goals	21
Summary Table of Strategic Goals	22
Detailed Presentation of Strategic Goals and Specific Objectives	23
References	46

Acronyms

ABNJ	Area Beyond National Jurisdiction
ACEA	African Centre of Excellency for Aquaculture
ACP	African Caribbean and Pacific
ANAF	Aquaculture Network of Africa
AU-IBAR	African Union-Inter African Bureau for Animal Resources
CAADP	The Comprehensive Africa Agricultural Development Programme
CSO	Civil Society Organizations
DEV-P	Development Partner
EAA	Ecosystem Approach to Aquaculture management
EAF	Ecosystem Approach to Fisheries management
ECOWAS	Economic Community of West African States
EEZ	Exclusive Economic Zone
EU	European Union
FAO	Food and Agriculture Organisation of the United Nations
GDP	Gross Domestic Product
IOC	Intergovernmental Oceanographic Commission of UNESCO
IUU	Illegal, Unreported, Unregulated
LME	Large Marine Ecosystem
MCS	Monitoring, Control and Surveillance
MEA	Millennium Ecosystem Assessment
MoUs	Memorandum of Understanding
MS	Member State
MSP	Marine Spatial Planning
NAPA	National Adaptation Plan of Action
NGO	Non Governmental Organisation
PFRS	Policy Framework and Reform Strategy for Fisheries and Aquaculture
PPP	Public-Private Sector Partnerships
RECs	Regional Economic Communities
RFBs	Regional Fishery Bodies
RFMO	Regional Fisheries Management Organisation
RFO	Regional Fisheries Organisation
SDG	Sustainable Development Goals
SMEs	Small and Medium Enterprises

SOFIA	The State of World Fisheries and Aquaculture
SPS	Sanitary and Phytosanitary
SWOT	Strengths, Weaknesses, Opportunities, and Threats
TAC	Total Allowable Catch
TBT	Technical Barriers to Trade
TBT	Technical Barriers to Trade
TCD	Training and Capacity Development
WTO	World Trade Organisation

Acknowledgements

My profound gratitude goes to Her Excellency Ambassador Yosefa Sacko for her vision and foresight in initiating the process for the formulation of a Blue Economy Strategy for Africa immediately following the Global Sustainable Blue Economy Conference in Nairobi, 2018. I also wish to express appreciation to the Director of DREA, Dr. Godfrey Bahiigwa for the support and facilitating the process; the AUC Departments of Trade and Industry, Energy and Infrastructure, AUDA-NEPAD for their collaboration during the formulation of the Africa Blue Economy Strategy. My special thanks go to the Government of Seychelles for their immense collaboration with the African Union during the formulation of the Strategy.

I wish to thank the consultant (Dr. Hashali Hamukuaya) who prepared this thematic area and the lead consultant, Professor Pierre Failler for technical coordination of the preparation.

I also wish to express gratitude Dr. Mohamed Seisay, Senior Fisheries Officer at AU-IBAR, for supervising the process of formulation of this thematic component. The invaluable contribution of the experts who participated in the stakeholders' consultative meeting is very much acknowledged and appreciated. Finally, I wish to acknowledge the support of the European Union and the AU member states for their support towards the formulation of the Strategy. I wish also to express my gratitude for the commitment and financial support by the Kingdom of Norway to Africa's blue economy growth.

Prof. Ahmed El-sawalhy

Director/Head of Mission, AU-IBAR

Context

The African aquatic ecosystems are endowed with a variety of biodiversity including fishery resources. Potentially, fisheries and aquaculture can immensely contribute to the socio-economic development of Africa by, inter alia, alleviate poverty and providing nutritional and food security. Since 2003, and under the leadership of the African Union, the continent has made enormous progress towards sustaining marine and inland capture fisheries and in developing aquaculture in the continent. The Comprehensive Africa Agriculture Development Programme (CAADP) endorsed by the Member States in 2003 articulated a target of 6 % fish resources' contribution to agriculture growth on the continent, as well as improve food and nutritional security, enhance livelihoods and generate wealth.

In 2004, the African Summit endorsed the Sirte Declaration which, among others, mandated the AU Commission to promote the development of fishery resources, develop fishing methods and equipment, improve facilities to reduce post-harvest losses, and encourage regional cooperation in the field of fishing, including the protection of fishery resources in the Exclusive Economic Zones. Subsequently, in 2005, Abuja, Nigeria, during the AU/ NEPAD 'Fish For All Summit', the African Heads of State and Government endorsed the New Partnership for Africa's Development (NEPAD) Action Plan for the Development of African Fisheries and Aquaculture. Additionally, during the Abuja Food Security Summit in December 2006, the Heads of State and Government committed to increasing intra-African trade by promoting and protecting fisheries products as one of the strategic commodities.

At the first Conference of African Ministers of Fisheries and Aquaculture (CAMFA) held in Banjul, The Gambia in 2010, the Ministers the challenges and opportunities in the sector and made comprehensive recommendations aimed at, among others, developing the fisheries and aquaculture sub-sectors in ways that focus on increasing productivity, profitability and sustainability. The Policy Framework and Reform Strategy for Fisheries and Aquaculture in Africa [41, 42], adopted by the Summit in 2014, is hailed as an authoritative blueprint for fisheries and aquaculture. Its main purpose is facilitating coherent policy development for the sustainable management of fisheries and aquaculture resources in the Member States. It provides policy actions and offers strategic solutions to the Member States to optimize benefits from their fisheries resources. Another milestone of 2014 was the adoption by the African Union of the 2050 Africa's Integrated Maritime (AIM) Strategy which places maritime security and the blue economy at the centre of sustainable development. It calls for the

Member States to map out strategies that provide long-term and sustained use of marine natural resources by different sectors (fisheries, tourism, municipalities, oil, gas and mineral exploration, scientific research and marine transport). During the extraordinary session of the Assembly held in Lomé, Togo in 2016, the Lomé Charter was adopted and its objectives include the promotion of a flourishing and sustainable blue/ocean economy.

It is therefore worth noting that this fisheries and aquaculture sub-theme of the African Union Blue Economy Strategy draws its provisions from the above-mentioned instruments and in particular, from the Policy Framework and Reform Strategy for Fisheries and Aquaculture in Africa [41, 42]. The socio-economic importance of fisheries and aquaculture cannot be underestimated. The total GDP of Africa in 2016 was estimated at 1.9 trillion USD of which fisheries and aquaculture contribute 1.26 percent [1]. With a population of 1.3 billion people, Africa is the second most populous continent in the world [2,7], and has the highest yearly percentage change in the world of 2.4 percent. Amid growing global population estimated at 7.7 billion people in 2019 [2], the demand for seafood will continue to increase and to avoid crisis, the supply must follow suit.

According to FAO estimates, 67% of global marine fish stocks are fished within biologically sustainable levels while 33% are fished at unsustainable levels. The estimates further reveal that maximally sustainably fished stocks (fully-exploited stocks) accounted for 59.9% and underfished stocks for 7% of the total assessed stocks [1]. Global production of fish, crustaceans, molluscs and other aquatic animals production reaches 171 million tonnes in 2016 with aquaculture accounted for 47% (80 million tonnes) [3]. World total marine catch was 79.3 million tonnes in 2016 while the global inland waters capture production was 11.6 million tonnes [1]. Major priority concerns in four of the African's Large Marine Ecosystems (the Canary Current LME, Guinea Current LME, Benguela Current LME and the Agulhas and Somali Current LME) are the decline in commercial fish stocks and non-optimal harvesting of living marine resources [4]. The situation is similar in inland waters [5]. The capture fisheries production stands at about 10 million tonnes and is expected to remain fairly constant throughout 2063 due to, inter alia, overfishing, overcapacity and poor governance [1, Table 1a]. Taking into account the fact that most of the marine fishery resources in Africa are either maximally exploited or over-exploited, it is highly unlikely to satisfy future demands by increasing national catches [6] or by rebuilding the 33% of stocks that are currently overfished in the very near future, because rebuilding requires time, usually two to three times the species' life span [1].

Africa records the fastest aquaculture growth in the world between 2006-2018, averaging 10% or more [7] and is expected to partially fill the growing fish supply-demand gap up to 2063. Despite huge potential, the growth is confined to relatively fewer countries with Egypt dominating the sector in 2016, accounting for 1.37 million tonnes (or 69%) of the total 1.98 million tonnes (2.5% of the world aquaculture production) while Nigeria ranked second with 300 thousand tonnes [1,3,Table 1a].

In 2018, the fisheries sector employs about 13 million people of which 7 million were fishers and 6 million were processors. More than half of the fishers are employed in inland fisheries and the largest share of processors work in marine artisanal fisheries [1,8]. These activities are often labour-intensive, small-scale fisheries that include both subsistence and commercial activities for people involved in harvesting, selling, and processing of fish products. In 2018, there were about 1.2 million aquafarmers across the continent, an increase from 920 thousand from 2014.

Fish is a low-fat, high-quality protein and is filled with omega-3 fatty acids and contains vitamins D and B2 and is a great source of minerals such as calcium, phosphorus, iron, zinc, iodine, magnesium and potassium. At the global level, fish provide about 3.2 billion people with 20% of their average per capita intake of animal protein and the per capita fish consumption was estimated at 20.3 kg per year in 2016 [1]. In Africa, fisheries and aquaculture provide food and nutritional security to 200 million people [9] including the coastal communities who are often among the poorest and most vulnerable. Further, fish contributes about 20% or more of the animal protein in Africa, while the average per capita per year fish consumption is half of the global average, at 10 kg [1]. Factors contributing to low per capita fish consumption include a) human population increase at a higher rate than food fish supply b) limitations in the expansion of fish production c) low-income levels d) inadequate storage and processing infrastructure and e) lack of marketing and distribution channels. Sadly, in Africa, the prevalence of undernourishment is 20% compared to 10.9% of the world, and it is more pressing in the sub-Saharan Africa where the number of undernourished people rose from 181 million in 2010 to almost 222 million in 2016, an increase of 22.6% in six years [10]. A recent study of West Africa found that 35% of children less than five years of age are stunted, while about 5 to 15% of young children die at a young age, a sign of acute hunger. Deficiencies in vitamins and iron are widespread in West Africa and contribute to illnesses and high rates of child mortality [6]. This situation is no different from other parts of sub-Saharan Africa.

Table 1a. Status of the fisheries and aquaculture

	Year	2018
Production (million tonnes):	Capture fisheries	10.0
	Aquaculture	1.98
Value added (Billion US\$)	Capture fisheries	21.2
	Aquaculture	2.77
Employment (millions)	Capture fisheries	13
	Aquaculture	1.2

Fish products are some of the most traded food items in the world today. In 2016, about 35% of global fish production entered international trade in various forms for human consumption or non-edible purposes [3]. Africa is a net importer of fish by quantity but it is a net exporter by value, suggesting the lower unit value of imports (mainly cheap small pelagic species such as mackerel which represent an important source of dietary diversification) and high valued-fish exports, which are destined primarily for developed country markets, particularly Europe [1]. The total first value of global fisheries and aquaculture production in 2016 was estimated at USD 362 billion of which USD 232 was from aquaculture production [1]. During the same period, the value of fish exported from Africa was USD 6.5 billion as compared to the import value of USD 5.6 billion [1]. The total gross value-added of the fisheries in Africa is estimated at USD 21 billion or 1.26% of the GDP (USD 1.9 trillion) of all African countries. Marine artisanal fisheries contribute the most at USD 8.1 billion, followed by marine industrial fisheries and inland fisheries at USD 6.8 billion and 6.3 billion respectively. The value of aquaculture is estimated at USD 2.77 billion [8].

Barriers to trade, such as sanitary and phytosanitary measures or rules of origin and product certification and ecolabelling and subsidies have stalled the trade process somewhat. Market distortions are biased in favour of technologically advanced countries to the detriment of developing countries, in particular, Africa.

Table 1b. Africa aquaculture food production (thousand tonnes; percentage of world total, 1995-2016, [1]).

	1995	2000	2005	2010	2015	2016
Africa	110	400	646	1286	1772	1982
	0.5%	1.2%	1.5%	2.2%	2.3%	2.5%
Egypt	72	340	540	920	1175	1371
	0.3%	1.1%	1.2%	1.6%	1.5%	1.7%
North Africa, excluding Egypt	4	5	7	10	21	23
	0%	0%	0%	0%	0%	0%
Nigeria	17	26	56	201	317	307
	0.1%	0.1%	0.1%	0.3%	0.4%	0.4%
Sub-Saharan Africa, excluding Nigeria	17	29	43	156	259	281
	0.1%	0.1%	0.1%	0.3%	0.3%	0.4%

Outlook

The African Union has made considerable investment over the past two decades to support its Member States in transforming Africa's fisheries and aquaculture for food, livelihoods and wealth creation. This fisheries and aquaculture strategy will serve as a roadmap to implement strategic goals and specific objectives for the sector to achieve its full potential by addressing challenges while capitalizing on enormous opportunities that exist to foster more wealth creation from Africa's oceans, seas and inland waterways. It will draw heavily on the reforms areas identified in the recently adopted African Union's flagship policy document Policy Framework and Reform Strategy for Fisheries and Aquaculture [41, 42] to assist the Member States, RECs and RFBs to unlock the potential of the sector.

The global consumption of fish, currently at 140 million tonnes, is projected to reach 200 million tonnes by 2030 [1]. According to the World Bank, due to the growing population and per capita income, demand for fish products in developed countries where households have strong purchasing power will increase to 30% by 2030, resulting in the poorest countries to suffer the most, if there no policy interventions [12]. This offers an opportunity for developing countries to increase both their aquaculture production and the captured fish for export. Many African countries have not yet developed their aquaculture sector, some have prioritised it but not yet succeeded. However, the demand from international markets will inevitably (due price to attractiveness) lead to an increase in the export of fish derived from capture fisheries, which may result in unintended consequences [1]: a) a reduction in the domestic fish supplies b) a reduction in per capita fish consumption c) a rise in prices due to the scarcity of the products d) increased food security insecurity in a number of countries that dependent on animal protein from seafood e) certain fish species may or are migrating due to the effects of climate change, thereby not available to the fishers, thereby increasing the vulnerability of the food industry and also creating a situation where fishers have to follow the fish in in the adjacent EEZs f) countries will invest more on fisheries management, enforcement and control of the fishery resources which will be less and less profitable to them.

According to FAO, Africa is one of the regions with the greatest scope for aquaculture expansion, at an annual rate of 2% or more [1]. Such rapid expansion is already evident during the last ten years or so when the annual aquaculture production rate reached double

digits [1]. To increase production requires a focus on, inter alia, efficiency, quality and lower the costs and relies more on technological developments than on human labour [1]. The Egyptian farming model founded on business-oriented farming methods that seek to support small, medium-scale and large-scale enterprises can be replicated across Africa to made a difference. This would be a strategic departure from failed donor-funded community projects aimed at food security and poverty alleviation.

By 2030, the population of Africa will reach 1.7 billion people – an additional 400 million people from the current level [7]. Therefore, fish food supplies must be greatly increased to meet the needs of a rapidly growing population and provide productive employment.

Table 2: Outlook of fisheries and aquaculture sectors.

	Year	2018	2030	2063
Production (million tonnes):	Capture fisheries	10.0	10.36	10.56
	Aquaculture	1.98	3.1	5.3
Value added (billion US\$)	Capture fisheries	21.2	27.45	28
	Aquaculture	2.77	5.1	8.62
Employment (million)	Capture fisheries	13.0	14.7	15
	Aquaculture	1.2	1.6	2.7

Based on FAO projection, capture fisheries production is not expected to increase beyond 2% and thus will remain fairly constant throughout to 2063 [1, Table 2]. However, aquaculture will experience significant growth from about 2 million tonnes in 2018 to 3.1 million tonnes by 2030, reaching 5.3 million tonnes by 2063 [11]. This production could even be high if the Egyptian model is replicated by most Member States [11]. Using the results from De Graaf and Garibaldi [2014], the value-added from capture fisheries could increase marginally from US\$ 21.2 billion in 2018 to projected US\$ 28 billion by 2063. The value-added for aquaculture is projected to reach 8.6 billion by 2063 compared to US\$ 2.8 billion in 2018. The fisheries and aquaculture sectors will continue to play a significant role in employing a large portion of the population. Despite the capture production projected to grow marginally, throughout 2063, additional employment is expected from, among others, value chain development, intra-African trade and reduction in post-harvest losses and containment of IUU fishing. Applying the same rationale as for the value-added [8], the number of fishers is projected to increase from 13 million in 2018 to 14.7 million by 2030, reaching 15 million by 2063. On the other hand, the number of aquafarmers is projected to reach 2.7 million by 2063 compared to 1.2 million in 2018. In total, fisheries and aquaculture will employ 17.7 million people by 2063.

The demand for fish products will outstrip supply and Africa will remain a net importer of fish needed to sustain domestic consumption [11]. The trade of fish for human consumption is therefore expected to decline by 17% from 2.78 million tonnes in 2016 to 2.3 million tonnes by 2030, and the deficit will be offset by import which will grow by 44% from 4.2 million tonnes to 6.11 million tonnes during the same period [1]. Intra-African trade and regional fish trade can be an effective alternative to address the fish deficit and meet the growing demand for fish in Africa by reducing barriers to trade.

The average per capita per year fish consumption is projected to reduce to 8.5kg/year by 2030 [11] but as low as 5kg/year [12]. Factors contributing to the lowering of per capita fish consumption include a) human population increase at a higher rate than food fish supply b) limitations in the expansion of fish production c) low-income levels d) inadequate storage and processing infrastructure and e) lack of marketing and distribution channels [1]. Policy interventions will be needed to address the reversal.

Fishing activities will be conducted within the framework of ecosystem-based management for ensuring sustainable development of the aquatic ecosystems. The use of an ecosystem for economic returns and social benefits must, however, take place in a manner that minimizes environmental degradation [1]. If an ecosystem and its services are not maintained, or in some cases restored, the natural capital is eroded and the system will not succeed; it will thus not contribute to improved food security and livelihoods or to achieving many SDG goals and targets [1]. Achieving the balance between conservation and sustainable development is vital as Africa strives to achieve the SDG goals and targets – especially SDGs (Goals: 1, 2, 3 and 14) 14 on oceans – and to ensure the long-term sustainability of aquatic ecosystem use.

Oceans play a very important role in both carbon sequestration and regulating the climate. Global warming will lead to modified ecosystem processes, changing climate variability and more intense climate-related events across the globe, including extreme temperatures and variations in rainfall (floods and droughts) [10]. While the impacts of climate change are being felt throughout the ocean realm, they are particularly acute for the fishers, the fish stocks they target and the marine coastal ecosystems on which they depend [6,13]. Understanding of these impacts due to ocean acidification, sea-level rise, higher water temperatures, and changes in ocean currents is critically important in terms of mitigation and adaptation strategies.

With this Strategy, it is feasible to for the sector to achieve within a foreseeable future, the CAADP target of 6 % fish resources' contribution to agriculture growth on the continent, as well as improve food and nutritional security, enhance livelihoods and generate wealth.

Challenges

The challenges that stem from the current context and the outlook are both strategic and technical.

Strategic Challenges

The five strategic challenges are a) governance b) economic and social c) nutritional d) environmental and e) inadequate capacity. They are briefly elaborated below:

a) *Governance*

- ***Open access in capture fisheries and ineffective foreign access agreements***

The African fisheries are largely characterized by unrestricted fishing that caused over-fishing, and sometimes depletion. Small-scale fishing communities need to have secure tenure rights to fishery resources and land as well as the ability to benefit from them to sustain their livelihoods and in line with the FAO Guidelines on small-scale fisheries. Member States should consider the adoption and implementation of the user rights-based fisheries management system to limit entry to the fisheries sector and keep catches at sustainable levels.

Most of the fishing operations conducted within the Exclusive Economic Zones (EEZ) of most African States are done by Distant Water Fishing Nations (DWFN) fleets, which include the EU (mainly Spain and France), Japan, South Korea, China, USA and Chinese Taipei through access fishing agreements. However, numerous agreements result in the significant loss of benefits for African countries due to their flawed formulation as a result of weak negotiating capacities due largely to relatively low involvement of fishing communities in the negotiation process contributes to the development of such agreements [14]. The AU Member States should adopt and implement the minimum standards for foreign fishing access in their waters [15] Noting that most either fully exploited or over-exploited, fishing agreements should only be granted once the fish stock has recovered.

- ***Historical focus on production***

Traditionally, countries have focussed on production and revenue maximization from the

fisheries [through, inter alia, license fees] driven by the need to produce benchmark quantities of fish, cash for national treasury and to exceed previous tonnages, with little or no reference to resource biological productivity and sustainability. That scenario has influenced the current fisheries policies and sadly had led to overexploited of most commercially-valuable fisheries resources, both marine and inland capture [16,17]. Countries must manage the fisheries resources sustainably using best practices and instruments.

- ***Limited resources for fisheries management and aquaculture development***

Sustainable fisheries management is resources-demanding from data collection, research, monitoring, control and surveillance. Aquaculture development is equally an expensive venture. Currently, resources allocated to the sector by the AU Member States are inadequate and the outlook is not promising considering competing national priorities. Fisheries agencies and departments have a strategic option to maximize the effectiveness of limited resources and prioritize and rank development interventions, work smarter, not harder, and operators need to fish better and not to fish more. Other options include the introduction of the innovative strategy of generating funds through resources-use rent (e.g., research levies, licence levies, quota levies).

- ***Inadequate governance at national level and for management of transboundary stocks***

The key transboundary issues and challenges in the management of the inland fisheries are related to inadequate fisheries governance [18] such as the absence of up-to-date policies, laws and regulatory standards at the national level; the non-harmonization of policies, laws, regulatory standards at regional level; low compliance and inadequate enforcement and limited effective involvement of stakeholders in the fisheries management process [19]. Shared lakes (Lake Victoria, Lake Tanganyika, lakes Edward and Albert, and shared river basins (Congo, Niger, Nile, Zambezi) have shared fish stocks such as catfish and tilapia. Similarly, in marine capture fisheries, Sardinella species, notably *S. aurita* is a typical example of transboundary fish species which is distributed along the African coasts on the eastern Atlantic Ocean from Morocco to South Africa. It crosses 22 jurisdictional areas with spawning and nursery grounds in different countries. In both cases (marine and inland), there are neither agreed regional ecosystem approach to fisheries (EAF) management plans or co-management in place, resulting in unsustainable management of shared and straddling fish stocks.

Member States must therefore cooperate and collaborate in accordance with, among others,

the provisions of the Law of the Sea (article 63, UNCLOS) [20], “where the same stock or stocks of associated species occur within the exclusive economic zones of two or more coastal States, these States shall seek, either directly or through appropriate subregional or regional organizations, to agree upon the measures necessary to coordinate and ensure the conservation and development of such stocks”. The LME and Inland Water Commissions, RFMOs, RFB and regional seas programs are uniquely and strategically positioned to take a leading role for the sustainability of the transboundary / shared fish stocks.

- ***Institutional weaknesses***

In many Member States, the legal, policy and institutional frameworks are not crafted to suit the unique features of fisheries and aquaculture and this has resulted in mismatches and overlaps. Furthermore, insufficient human capacity to cover all key areas in fisheries and aquaculture administration, management and research as well as weak information-collection and analysis systems hampers sound decision-making processes. The Member States must mainstream fisheries and aquaculture in national policies and development plans.

- ***Decentralization***

In recent decades, there has been a noticeable trend in the AU Member States regarding the devolution of authority and functions from central to provincial/regional/local levels and in the fisheries sector, this has meant that local authorities have taken responsibility for some key functions such as fishing vessel/craft registration, licensing, data collection and enforcement, especially in small-scale fisheries and aquaculture. This well-intended policy has in some cases posed a challenge as institutions do not have sufficient skilled personnel or resources to ensure that the decentralized fisheries governance arrangements are operational and effective. Member States should invest in training and skills development for the sector to grow.

b) *Economic and social*

- ***Poverty of fishers and fish farmers and the need for food security***

Diminishing aquatic resources, lack of user and access rights, exposure to climate and weather risks and political and social marginalization can lead fishing and aquaculture dependent communities – men and women – to become trapped in a vicious circle of poverty [21]. Most fisherfolks in fisheries and aquaculture sector in Africa are poor and impoverished, having few rights of tenure over resources of their livelihoods and few other livelihood options. These small-scale fishers, less educated and less organized are often excluded from the decision-

making process, and with little economic or political weight. Fishing and aquaculture is the only available source of income and animal protein, and the constraints associated with this – particularly in the context of already depleted fish stocks, represent a significant policy and development challenge for many governments. Nonetheless, poverty eradication remains high in the developmental agenda of all African States. Member States should direct their poverty eradication efforts towards improving the governance of the sector and empower fishing communities and make them gain more control over the basic conditions that determine their well-being.

- ***Population growth and pressures on capture fisheries***

Africa is projected to see the largest relative increase in the size of its population by 2030 to 1.71 billion people. Most AU Member States have high-fertility rates, with large populations concentrated in coastal and riparian areas. This, coupled with a heavy reliance on fish for animal protein, has led to significant pressure on the fisheries resources, and in many countries to overexploitation of the fisheries. Sustaining demand by an increasing population for fish protein, while at the same time recovering stressed stocks and ecosystems, requires new approaches to management and different supporting mechanisms and skills from those of the past and constitute an important consideration in this strategy.

c) *Nutritional*

Statistics shows that in 2017, the AU Member States imported fish and fish products estimated at US\$ 4,8 billion (3.7 % of global fish imports). The value of the exported fish and fish products during the same time was US\$11 billion, an estimated 8.5 % of global fish exports [22]. Out of the 54 AU Member States, at least 35 States are operating on a fish production deficit and highly dependent on imports [22]. The global and continent-wide demand for seafood, driven by factors such as population growth, preference for fish as a diet of choice for health reasons, the growing affluent middle-class and growing demand for aquaculture products will continue to increase. One of the greatest challenges, therefore, is for the continent to produce enough fish to meet its requirements and excess for export.

d) *Environmental*

- ***Climate change and climate variability***

Climate change and climate variability are already impacting on Africa's aquatic systems and are some of the external drivers that negatively impact the fisheries and aquaculture sector in the continent. In inland ecosystems, they are causing changes in water resources availability

and reduction in precipitation and increased evaporation affecting water availability and fish habitats in inland ecosystems [14, 16, 18, 19, 23]. In marine coastal ecosystems, sea-level rise, higher ocean temperatures, increasing acidification, and changes in the ocean current patterns will have tremendous impacts on fish stocks abundance, composition, distribution and availability in ways that are not yet fully understood. [24] and could result in major ecosystem changes, collapse of key fish stocks, and threats to biodiversity. Distributional shifts of fish species will have management, jurisdictional and/or operational implications and will result in hardship and disruption in the fisheries and communities in affected areas. Fisherfolks are largely poor, with very little ability to adapt to reduced catches and catch rates and will, therefore, be affected disproportionately. The countries need to initiate activities for building resilience and reduce the vulnerability of the fishing communities to climate change and variability through, for instance, strengthening adaptive capacity and coping strategies and implementing participatory and integrated strategies to ensure food and livelihood security. Interventions could include the establishment and strengthening of early warning systems and information systems, especially at regional levels, improve risk reduction (prevention and preparedness) strategies and enhance response to shocks.

In most countries, the fisheries and aquaculture sector are not prioritized in National Adaptation Programmes of Action (NAPAs). Therefore, actions should be taken now to ensure that fisheries and aquaculture are integrated into the National Action Plan for Adaptation (NAPA) established in the framework of the United Nations Framework Convention on Climate Change (UNFCCC). Climate change is a complex subject and Member States are urged to working in collaboration with regional and international partners and specialised institutions for synergies and complementarity.

- ***Environmental variability and predictability***

Marine ecosystems are complex and highly variable and are challenging to model and predict. Human impacts such as fishing, extraction, pollution and coastal development are superimposed on this inherent natural variability, and the combined effects of anthropogenic disturbance (e.g. climate change) and natural variability could induce ecosystem change and the collapse of the fisheries resources. Potential socio-economic consequences of poor predictability include possible job losses, over and under-utilization of resources, food insecurity, high production costs, national/regional conflict, and unpredictable changes in government revenue. Strengthen national capacity and working regionally and internationally would improve the predictability of extreme events.

- **Pollution**

Most of the lakes are largely polluted mainly from unsustainable fishing practices. The main sources of pollution being fuel and oil spills, solid wastes, and untreated liquid wastes (for example discharge of tailings waste from mines). Pollution reduces fish stocks and diversity and destroys important spawning areas. Countries must adhere to national, regional and international pollutions instruments.

- **Threats to biodiversity**

Healthy ecosystems are critically important for the living marine resources to survive. Among the principal environmental stressors in inland fisheries are: threats to fish biodiversity due to human population growth and water demand for agriculture, industry and domestic uses within the lakes / rivers basins, and proliferation of aquatic weeds such as water hyacinth also threatens fish space [16, 17, 18, 19, 23]. Countries must adhere to national, regional and international pollutions instruments.

e) *Inadequate capacity*

- **Dearth of financial investment opportunities**

Lack or inadequate access to financial resources by prospective capture fisheries or aquaculture entrepreneurs is a common feature in the sector across all countries. The sector is perceived as high-level risks by the investors and financial institutions are reluctant to rent their monies. This perception is evidenced by weak and incoherent policies that are still developing. Internal support for the sector is insufficient and there is a scarcity of reliable information on the potential productivity of capture fisheries and aquaculture.

Realising the importance of PPPs in capture fisheries and aquaculture, some countries have mainstreamed PPPs in their development policies and strategies in the sector. PPS provides opportunities to do, among others, a) improve the quality of service by allowing both sectors to do what they do best: government acts as the regulator and focuses on planning services and monitoring performance; the private sector focuses on managing the day-to-day delivery of the service b) improve cost-effectiveness by taking advantage of private sector innovation, experience and flexibility c) increase investment without raising public debt d) better allocation of risk, as a core principle of PPP is to allocate risk to the party best able to manage it at lowest cost d) faster implementation, as design and construction risks and payments linked to service delivery are large incentives for private companies to act quickly [25, 26, 27].

- ***Improving marine knowledge***

Inadequate data and information about and understanding of environmental variability and system-wide impact hampers sustainable management of the fisheries resources and results in the non-optimal utilization of these resources. There is generally insufficient capacity, expertise and ability to monitor environmental variability, to assess the linkages and ecosystem impacts of this variability, and to develop the predictive capability required for sustainable integrated ecosystems' management. There is also an unequal distribution of human and infrastructure capacity between and among the AU Member States. Socio-economic consequences of not strengthening capacity include the potential for sub-optimal use of the fisheries resources due to lack of information, knowledge and understanding required for resource management. Capacity is a cross-cutting challenge that requires strategic interventions at all levels.

Technical Challenges

Twelve technical strategic challenges facing the African fisheries and aquaculture sectors are described below:

a) *Value addition*

Value addition is the key element that enables optimum profit or gains from the fish products. It creates needed employment and foreign currency earnings. In developed countries, consumers are increasingly attracted by the availability of ready-to-cook or ready-cooked meals, which the African countries can prepare and get better price instead of exporting unprocessed fish to European markets or elsewhere). Embracing the concept of value addition substantially enhancing the benefits from the fishing industry – gain more from less catch. There is a need to transfer of technology and provide the AU Member States with the necessary resources to meet the processing, packaging and marketing requirements for the target markets. Value addition should be prioritized within the seafood value chain in government planning, and i) private investors should be encouraged, and where feasible assisted, to invest in seafood value addition, and the government can do this by, for instance, zero-rating imported value addition machinery ii) seafood farmers need to be equipped with the skills and knowledge that's they need to function at various stages of the value chain and training initiatives would be important in this regard iii) there is need to continuously study and if necessary, redefine the chain in order to rid it of unnecessary bottlenecks and operational challenges v) market development and diversification vi) information centres should be established to furnish various operators at various chain nodes with necessary information for purposes of planning investment decision making [28].

The African Member States must support the investments in value-added products, for example, fish smoking technologies, to increase the shelf life of fish (notably catfish and tilapia) that can be exported within the continent (taking advantage of regional trade agreements) and to the people in diaspora.

b) Job creation

About 5.7 million people were employed in fisheries and aquaculture in Africa, many of whom struggle to maintain reasonable livelihoods [1]. It has been assumed that many more people are involved along the supply chain. FAO sex-aggregated data of 2016 shows that 11% of the total fishers in Africa were women [1]. The challenge is to grow the sector to its potential so that it can serve as a source of profitable and sustained employment for the people, including the youth and women. Post-harvest processing can create additional jobs in the sector [29].

c) Integrated and prospective approach to marine ecosystem

Integrated ocean management brings together all relevant government bodies, sectors and stakeholders for more effective, inclusive and sustainable management. Noting the commitment to achieve Target 14.2 that calls for marine ecosystems to be managed sustainably by 2020, it is timely for the AU Member States to consider institutionalise a five-module Large Marine Ecosystem (LME) approach for the assessment of the changing state of the ecosystem using a suite of indicators, namely, productivity, fish and fisheries, pollution and ecosystem health, socio-economics and governance [30]. The six African LMEs, viz., Agulhas Current LME, Benguela Current LME, Guinea Current LME, Canary, Mediterranean Sea LME, Red Sea LME and Somali Current LME are at different stages of implementation, yet all are grappling with a range of challenges spanning from technical to governance issues which affect the application of ecosystem approach to ocean governance. The most common challenges and constraints include: little or no data especially ecosystem information; limited national capacities for effective application of the LME approach; inadequate financial contribution from governments; limited and sometimes poor coordination and interaction across line ministries; ineffective private sector and community involvement in the management and the disconnect between science and governance [4]. Fisheries and aquaculture are an integral part of the healthy ecosystems, and the ecosystem approach to fisheries (EAF) and the ecosystem approach to aquaculture (EAA) should be mainstreamed in the management of capture fisheries and aquaculture. This is particularly important to ensure the preservation of biodiversity, including vulnerable habitats.

d) *Assessment tools for better governance*

The assessment of the sustainability of the fisheries in national waters is faced with the problem of lack of appropriate tools and requisite skills. The current assessments, where they exist, provide partial reflection because they are based on one dimension, mainly ecological, of fisheries sustainability. Good assessments should include all main pillars of sustainability, namely, ecological social, economic, environmental and governance. The ecological assessment provides the best information on the least disruptive effect on the ecosystems by catching, minimisation of discards and undersized fish, the least potential damage to the sea-bed, habitats. The social assessment sheds light on the contribution to the improvement of food security, well-being of the fishing communities, and more generally, that of the national population. The economic assessments show, for instance, the viability of subsidies that could result in equitable sharing of profits and a significant contribution to the local and national economy. The assessment tools should include the assessments of the value of the ecosystems' goods and services.

Capacity development of national expertise for applying the most relevant tools should be prioritised and exchange of expertise amongst the institutions of the Member States is encouraged.

e) *Increasing safety and security – integrated maritime surveillance*

The security of EEZs of African Member States is of paramount importance to develop and guarantee the sustainability of their Blue Economy, which affects different maritime sectors including fisheries, tourism, transport, trade, offshore exploitation and many others. Through the existing instruments of governance, the Africa Integrated Maritime Strategy (2050 AIM Strategy) will establish a Combined Exclusive Maritime Zone of Africa (CEMZA) that will grant Africa enormous cross-cutting geo-strategic, economic, political, social and security benefits, as it will engender collective efforts and reduce the risks of all transnational threats, environmental mismanagement, smuggling and arms trafficking. It will also boost intra-African Trade and maritime safety and security, protection of the marine environment, fisheries control, among others. Currently, the piracy industry sector is a serious problem as it poses a real threat not only to the safety of vessels and their crew but also to the economies of affected countries. According to the 2018 annual report of the International Maritime Bureau [31], the Gulf of Guinea is particularly dangerous for seafarers with reports of attacks in waters between the Ivory Coast and the Congo more than doubled in 2018, and these incidents accounted for the overwhelming majority of serious acts of piracy worldwide. The

Gulf of Guinea accounted for all six hijackings, 13 of the 18 ships fired upon, 130 of the 141 hostages held, and 78 of 83 seafarers kidnapped for ransom worldwide. Since 2013, the number of piracy in along the Somali has declined significantly (just 2 recorded in 2018) due to extensive military and naval support that was provided by the international community in response. The African Member States need to collaborate by coordinating their MCS operations and share information timely to ensure freedom of navigation at sea, curb illegal Unreported Unregulated fishing, illicit trafficking, piracy and maritime criminality. The regional approach through joint operations through the RECs and LME commissions could be the most effective way of addressing this challenge and, ECOWAS (in the Gulf of Guinea) and SADC are advanced in this regard.

f) *Maritime spatial and better coordination and synergy*

The African marine and coastal environments are highly productive ecosystems and provide important goods and services for economic and social development of the people. They are also faced with serious challenges due to human activities. In recent years, dozens of AU Coastal Member States have initiated MSP process as part of their national developmental programs or through regional arrangements such as the regional seas programmes (the Abidjan and the Nairobi conventions) or commissions (e.g. Benguela Current Convention) and may have institutionalized the MSP. As defined by IOC-UNESCO, Marine spatial planning is a public process of analyzing and allocating the spatial and temporal distribution of human activities in marine areas to achieve ecological, economic and social objectives that have been specified through a political process [32]. This is essential to balancing sustainable use and conservation imperatives and mitigate conflicts and create synergies amongst the users, particularly during this time of the BE initiatives. It is thus essential to protect vulnerable areas for spawning and nursery grounds of major fisheries along the African continent. Successful implementation of ecosystem-based management in the marine environment depends on the involvement of all key stakeholders. The acceptance of the MSP process by the Member States has become a crucial step in making ecosystem-based and ocean governance reality. The challenge is often to agree on an appropriate competent authority responsible for MSP at the national level with the appropriate legal mandate and authority to avoid sector-based approaches to the process.

g) *Migrant fishing*

With the declining of the resources in traditional fishing grounds, compounded by the effects of climate change and the intensification of weather variations, fishing migration has become

an essential element of artisanal fisheries in West Africa, dominated largely by the Senegalese and to a lesser extent, the Ghanaian fisherfolks. While fishing migration still largely contributes to food security and provision of sustainable livelihood for coastal communities, this type of migration has reached both an ecological and social deadlock and its future is largely uncertain [33]. It poses a serious technical challenges such as a) fisheries statistics - the present protocols for data collection on catches do not take into account the area where the fishing activity takes place. For the countries of origin of the migrant fishers, this situation overestimates their catch potential while for the host country, it underestimates its catch potential, thereby thwarting any attempt to establish any fisheries policy b) the legality of such fishing activities (in terms of both marine spaces accessed and fishing gears employed), and the conflicts such activities may induce vis-à-vis existing local fishing communities [33, 34]. Migrant fishing should also be taken into account in the formulation of national and regional policies in such a way as to ensure the effectiveness of the regulations governing access, control and surveillance.

h) Fishery subsidies and overcapacity

Fishery subsidies are harmful as they disrupt and distort international trade. They fuelled overcapacity in fishing vessels, resulting in overfishing in already declining fish stocks, affecting the sustainability of the resources. They come in the form of tax-free fuel, tax exemptions, assistance to modernise equipment, low-interest loans, etc. to the operators. In the processing and the marketing segments, they are provided as import and export tax exemptions. They encourage more sustained exploitation of fish stocks. Under the SDG Goal (Goal No. 14, Target 14.6), all countries must by 2020, “prohibit certain forms of fisheries subsidies which contribute to overcapacity and overfishing, eliminate subsidies that contribute to illegal, unreported and unregulated fishing, and refrain from introducing new such subsidies.” Ending the subsidies would free up substantial amounts of government funds that could otherwise be available to support sustainable fisheries in the AU Member States.

i) IUU fishing

IUU fishing is a serious challenge in Africa, both inland [16, 17, 18, 19, 23] and in marine waters [35]. The IUU fishing activities in Africa are diverse and include the participation of both foreign and local actors. They include unauthorised fishing in closed areas/seasons, illegal fishing by foreign vessels (distance water fleets), fishing with forged and fraudulent licenses or vessel registrations, unreported and misreported catches, fishing threatened, endangered and protected (TEP) species, catching undersized fish, taking fish in excess of quota, using

prohibited gear and methods, illegal transshipment, landing in unauthorised ports, fishing without an observer on-board and failing to operate a vessel monitoring system [35]. From an economic viewpoint, the continent lost 4.7 million tonnes of catches from marine fisheries which is about 80% of the reported tonnage of 5.9 million tonnes in 2016, valued at US\$ 10 billion, about 40% larger than their estimate of the value of the reported catches (US\$ 7.1 billion) [35]. It threatens resource conservation, the sustainability of fisheries and the livelihoods of fishers and other stakeholders in the sector and exacerbates unemployment, malnutrition, poverty and food insecurity [35]. This practice allows for the introduction on the market of fishery products which are less expensive than those derived from responsible fishing. Target 14.7 of the SDG calls the ending of IUU fishing by 2020. Action is needed now by all Member States to eliminate IUU fishing by, inter alia, strengthening national fisheries laws and regulations, take punitive action against perpetrators, establish mechanisms that encourage compliance, implement the provision of the Agreement on Port State Measures to Prevent, Deter and Eliminate Illegal, Unreported and Unregulated Fishing (PSMA), adoption and implementation of National Plan of Action, introduce Catch Documentation Scheme for traceability of fish, and ensure that subsidies or any other benefits that they grant to their fishing sectors do not nurture IUU fishing.

The RFMOs and Regional Fisheries Bodies are uniquely and strategically positioned to take a leading role in regional and global efforts in the fight against IUU. These entities can compile an IUU Fishing Vessels List as a tool to combat illegal fishing and broader fisheries crime.

j) *Conformity to international standards*

According to FAO, fish and fishery products are among the world's most traded food commodities, and trade in the fisheries and aquaculture sector operates in an increasingly globalized environment [36]. When developing national fisheries and aquaculture sector, tariff and non-tariff barriers to trade must be considered from a technical viewpoint. Compliance with measures adopted by the World Trade Organisation (WTO) through its Sanitary and Phytosanitary (SPS) Agreement and the Technical Barriers to Trade (TBT) Agreement is vital for fish trade. Other non-traffic measures such as certification, rules of origin, eco-labelling, traceability, custom clearance are signs of progress as actors in the fishery sector are made accountable to guarantee human health and food safety and eradicates unsustainable fishing practices. In practice, many non-tariff measures can reduce or block effective market access for developing countries.

There exist immense challenges faced by developing countries to exporting fish products into the lucrative EU markets because of stringent regulations and requirements [37]. These challenges include difficulties faced by the national institutions (e.g., legislation, human capacity, accredited laboratories, financial constraints), and the lack of collaboration between key institutions.

It is critically important for the AU Member States to continue to speak with one voice (African Voice) in WTO negotiations (and at other fora) through powerful groups, namely, the African Group, the ACP and the G-90 to protect their interests, especially to ensure that tariff escalation does not prevent them from reaping the potential benefits of fish trade, and to ensure that non-tariff measures do not constitute unnecessary barriers to fish trade. Strengthen capacities by pooling expertise and technical skills of exporting countries to adhere to the series and challenging import requirements would require collaboration / cooperation at the regional level to increase economies of scale.

k) *Costs of aquaculture production*

The lesson learnt from failed aquaculture initiatives in Africa include [38]: a) aquaculture promoted in regions that are unsuitable b) inadequate supply of quality and affordable fish feed ingredients, prohibitive transport costs and a lack of fingerlings for stocking ponds c) lack of coordination between development and research, limited availability of finances d) inadequate collaboration within and between administrative departments e) lack of stability of institutional frameworks and inefficient rural extension systems f) limited availability of well-trained personnel and extension officers g) theft of equipment and poaching of stock. Therefore, one needs to avoid the pitfalls of the past and apply innovative and proven best practices such as those of leading aquaculture producing countries in Africa, notably Egypt [39] and Nigeria [40].

l) *Paucity of reliable data*

Complete, accurate and timely fisheries statistics are critical for monitoring the fisheries and aquaculture and for supporting policy development and implementation at the national, regional and international levels, and for measuring progress towards meeting the SDGs. Data paucity across the sectors (such as catch data, socio-economics data, trade data, biological data, environmental data is a serious challenge). Most countries do not have the capacity or compile reliable fisheries statistics, a situation that must be addressed by the Member States.

Despite all the challenges described herein, political will is evident in many countries to manage their fisheries optimally and develop their aquaculture sustainably within healthy aquatic ecosystems. There is a need right now for all the AU Member States to act by creating enabling environment and supporting the development and growth of the sector in which fish is harvested or produced, processed and marketed sustainably thereby contributing to the economic and social well-being of the people.

Strategic Goals

The following three strategic goals (Table 3) respond to the African Member States' concerns regarding sustainable use of the fishery resources and the development of the aquaculture sector:

1. Optimise conservation and sustainable fisheries and aquaculture resources use while minimising conflicts with other blue economy sub-themes
2. Achieving full wealth-generating potential for fisheries and aquaculture sector to optimally contribute to the blue growth
3. Ensuring sustainable social, economic, environmental and equitable outcomes and human rights whilst safeguarding natural capital and blue investment

Each strategic goal is divided into specific objectives, which are themselves characterized by several targets. These targets are not static. Although they are currently being applied today, they can, nonetheless, be reformulated at the time of evaluation or interim reports. Furthermore, possible new priorities may emerge in the coming years, thereby making others less urgent.

The goals and objectives are presented below in the form of a summary table (Table 3), followed by a more detailed breakdown of the targets, actions and indicators for each objectives Tables 4-18).

Summary Table of Strategic Goals

Table 3: Summary of Goals and Objectives

Goals	Goal 1 Optimise conservation and sustainable fisheries and aquaculture resources use while minimising conflicts with other blue economy sub-themes	Goal 2 Achieving full wealth-generating potential for fisheries and aquaculture sector to optimally contribute to the blue growth	Goal 3 Ensuring sustainable social, economic, environmental and equitable outcomes and human rights whilst safeguarding natural capital and blue investment
Approach	African Member States led grand initiative to unlock full potential of the fisheries and aquaculture within the blue economy space through targeted interventions, supported by multiple partners within government sectors, private sectors, NGOs, CSO, academics and development partners, and with fully support by the AU during implementation.		
Objectives	Establishing institutional coordination mechanisms to harmonised fisheries and aquaculture activities with other blue economy themes	Develop small-scale fisheries whilst minimising the negative impacts of other blue investments	Develop communication strategies about blue growth as well as create awareness and develop human capacity
	Promote conservation and sustainable management of aquatic resources	Promote inclusive blue value chain incorporating fisheries sustainable aquaculture, ornamental fisheries and tourism sector	Ensure security of investment of fisheries and aquaculture
	Establish regional and sub-regional cooperation in the blue economy themes	Achieve a responsible and equitable fish trade and marketing including inclusive inter-regional and cross border fish trade	Create safe working conditions and security
		Attract and promoting private-public-partnership (PPP) sectors investments and financing for fisheries and aquaculture in order to realise the full potential of the blue growth	Strengthen resilience and reducing vulnerability to climate change
		Accelerate the dev of fisheries and aqua fish processing and storage capacities within BE-related industries	Empower women and youth in fisheries and aquaculture in order to take full advantage for blue growth
		Maximise benefits from high seas fisheries	Rehabilitate and or secure threaten fishing grounds/ zones, prevention of land-based pollution and degradation of aquatic environments

Detailed Presentation of Strategic Goals and Specific Objectives

Table 4: Presentation of Objective 1 of Goal 1

Goal 1 – Optimise conservation and sustainable fisheries and aquaculture resources use while minimising conflicts with other blue economy sub-themes			
Objective 1 - Establishing institutional coordination mechanisms to harmonised fisheries and aquaculture activities with other blue economy themes			
Targets	Actions	Indicators and time frame	Coordinator and Partnership
Establish institutional multi-sectoral coordination mechanisms at national level	Conduct situational assessment	Situational Analysis Report (2023)	C:AU-AIBAR P: MS, DEVP
	Integrate key stakeholders in planning and implementation at all levels	Integration completed (2024 onwards)	C:AU-AIBAR P: MS
	Develop an integrated budgeted action plan to implement actions 1.1.1 and 1.1.2 Develop a Multi-sectoral National Spatial Management Plan for blue economy themes	Action Plan (2024) developed and approved	C:AU-AIBAR P: MS, DEVP
	Establish a mechanism at national level to coordinate blue economy themes	Coordination mechanisms in place (2023)	C:AU-AIBAR P: MS
Adopt multi-level approach for harmonized fisheries and aquaculture policy with international, regional, sub-regional and national level	Conduct a multi-sectoral study (s) to identify incoherence policies in blue economy themes for harmonization	Report available (2024) and incoherence identified and harmonised	C:AU-AIBAR P: MS, DEVP
	Ratify and/or align relevant international/regional instruments related to blue economy themes	Instruments ratified (2025)	C:AU-AIBAR P: MS
Develop a sector strategy that built around the generation and sustainability of societal benefits	Find ways to mainstream fisheries and aquaculture strategies and plans into national development plans	Strategies and Plans incorporated into national developmental plans (2020-2063)	C:AU-AIBAR P: MS
	Implement globally accepted best practices and policies and pursuing excellence in fisheries science and integrated evaluations	Best practice and policies implemented (2020-2063)	C:AU-AIBAR P: MS, DEVP
	Setup management frameworks for each fishery and for unexploited or under-exploited resources	Management framework / plans produced and approved (2023)	C:AU-AIBAR P: MS, DEVP
	Introduce co-management and the Ecosystem Approach to Fisheries (EAF) management	Co-management in place (2024) EAF management institutionalised (2023)	C:AU-AIBAR P: MS, DEVP

Table 6: Presentation of Objective 3 of Goal 1

Goal 1 – Optimise conservation and sustainable fisheries and aquaculture resources use while minimising conflicts with other blue economy sub-themes			
Objective 3. Establish national, regional and sub-regional cooperation in the blue economy themes			
Targets	Actions	Indicators and time frame	Coordinator and Partnership
Develop strategic cooperation in fisheries and aquaculture	Actively participate in, and provide support to the RFMOs, RECS, RFB whose mandate include fisheries and aquaculture to utilise fisheries resources sustainably	Meeting reports (2020-2063)	C: AU-AIBAR P: MS
	Assess the capacity needs of regional organisations on information collection, analysis and dissemination to achieve such goals	Reports on capacity assessments produced and approved (2021)	C: AU-AIBAR P: RFMOs, RFBs, RFOs, DEVP
	Support the formation of regional federations of producers' organizations	Regional federations established (2020-2063)	C: AU-AIBAR P: MS, CSOs, NGOs, DEVP
	Mobilize financial resources for investments in fisheries and aquaculture development	Annual national reports (2020-2063)	C: AU-AIBAR P: MS, private sector, DEVP
Set up regional action plans	Establish an efficient dialogue and coordination processes between riverine countries and other stakeholders for effective bilateral and/or regional cooperation for shared resources	Regional Action Plans in Place (2024)	C: AU-AIBAR P: MS, RECs, RFMOs, RFBs, RFOs, DEVP
Assess coherence of fisheries management at regional levels and harmonized where feasible	Conduct a study to determine if fisheries management approaches are coherent at regional level	Report produced and approved (2023)	C: AU-AIBAR P: MS, RECs, RFMOs, RFB, RFOs, DEVP
	After the study in 3.3.1, harmonise decision-making processes	Harmonisation report produced (2022)	C: AU-AIBAR P: MS, RECs, RFMOs, RFBs, RFOs, DEVP
	Develop joint management plans and protocols for shared stocks and implement joint assessments for shared stocks	Joint management plans produced	C: AU-AIBAR P: MS, RECs, RFMOs, RFBs, RFOs, DEVP
Establish aquaculture zones	Determine the most suitable location for aquaculture development	Report of suitable relocations (2023)	C: AU-AIBAR P: MS, DEVP
	Introduce zones for aquaculture development in accordance with areas of high potentials	Aquaculture zones declared (2024-2025)	C: AU-AIBAR P: MS, DEVP
	Identify and protect critical habitat and migratory routes	Report produced and approved (2023)	C: AU-AIBAR P: MS, RECs, RFMOs, RFBs, RFOs, DEVP

Targets	Actions	Indicators and time frame	Coordinator and Partnership
Set up conflict resolution mechanisms	Institutionalise MSP	MSP institutionalised (2023-2025)	C: AU-AIBAR P: MS, NGOs, maritime industries, DEVP
Support RECs and RFBs in regional economic integration	Carryout regular reviews and updates of the legal frameworks of these regional institutions	Periodic reports (after every five years) produced and approved (2020-2063)	C: AU-AIBAR P: MS, DEVP
	Strengthen linkages among RFBs through MoUs and Letters of Agreement	MoUs signed (2020-2063)	C: AU-AIBAR P: DEVP
	Establish and support a Network of RECs and RFBs Secretariat	Network established and supported (2020-2063)	C: AU-AIBAR P: MS, RECs, RFBs, DEVP
	Establish greater collaboration among LMEs projects / commissions	Collaboration established and nurtured (2020-2063)	C: AU-AIBAR P: MS, LME projects/ commissions, DEVP
	Establish promote linkages between RECs, RFB and NGOs	Linkages established and promoted (2020-2063)	C: AU-AIBAR P: MS, RECs, RFBs, NGOs
	Undertake the coordination with the donor	Coordination in place (2020-2063)	C: AU-AIBAR P: MS, DEVP
	Set up an effective implementation of management plans for shared stocks and create mechanisms for the monitoring of such plans	Management plans agreed and being monitored (2021-2063)	C: AU-AIBAR P: MS, RECs, RFMOs, RFBs, RFOs, DEVP
	Develop and implement coherent policy such as for promoting regional fish trade, common MCS systems, and minimum conditions of access	Policies developed and approved (2020-2025)	C: AU-AIBAR P: MS, RECs
	Initiate a process for dialogue between RECs/ RFBs and stakeholders, particularly SME investors in fisheries and aquaculture	Process initiated and supported (2021-2024)	C: AU-AIBAR P: MS, RECs, RFBs, NGOs, CSOs
Design a way for replication of best practices	Incorporate fisheries and aquaculture into the regional political and economic integration agenda	Fisheries and aquaculture incorporated in regional political and economic integration agenda (2020-2063)	C: AU-AIBAR P: MS, RECs, DEVP
	Carryout the dissemination of best management practices and exchange of experiences	Dissemination of best practice in place (2020-2063)	C: AU-AIBAR P: MS, RECs, RFMOs, RFBs, RFOs
Assess competencies of RECs and RFBs	Develop and built capacity for RECs and RFBs on a wide variety of disciplines (science, socio-economics, trade, management, law)	Capacities of the RECs and RFBs strengthened (2020-2063)	C: AU-AIBAR P: MS, RECs, RFBs, academia, DEVP

Table 7. Presentation of Objective 1 of Goal 2

Goal 2 - Achieving full wealth-generating potential for fisheries and aquaculture sector to optimally contribute to the blue growth			
Objective 1 – Develop small-scale fisheries whilst minimising the negative impacts of other blue investments			
Targets	Actions	Indicators and time frame	Coordinator and Partnership
Promote, support and coordinate sustainable development actors	Implement a holistic EAF management approach (multi-sectoral approach)	EAF adopted and implemented (2020-2063)	C:AU-AIBAR P: MS, RECs, RFMOs, RFBs, RFOs, industry, DEVP
Catalogue stakeholders for training and capacity development	Establish partnership with resource users, appropriate government agencies, NGOs, CSOs and PO at micro, meso and macro level to help develop the capacities needed for safe, viable and sustainable participation of communities in fisheries management	Partnerships established (2021) Training and capacity development intervention developed (2021)	C:AU-AIBAR P: MS, RECs, RFMOs, RFBs, RFOs, industry, DEVP
	Develop and built capacity to empower communities in innovation, including their implication in policy-making process and enhance sustainability of democratic structures and processes	Training and capacity development interventions delivered (2021-2063)	C:AU-AIBAR P: MS, NGOs, CSOs, academia, Fishing Associations, DEVP
Identify emerging opportunities	Assess new and appropriate emerging opportunities for fishing industries related to small-scale fisheries and coastal development	Report on emerging opportunities produced and approved (2022)	C:AU-AIBAR P: MS, academia, Fishing Associations, DEVP
Analyse overall contribution of small-scale fisheries to the economy	Assess and value social benefits of small-scale fisheries at local national sub regional and regional levels, including value of the fisheries, contribution to GDP, employment and other socio-economic information	Assessment report produced and approved (2022)	C:AU-AIBAR P: MS, academia, Fishing Associations, DEVP
Assess the utility of ecolabelling and certification schemes	Undertake a review of eco-labeling and certification schemes that commensurate with the needs of small-scale fisheries sector that would enhance prospects of income generation as well as sustainability of exploited fish stocks	Review report produced and approved (2022)	C:AU-AIBAR P: MS, DEVP

Goal 2 - Achieving full wealth-generating potential for fisheries and aquaculture sector to optimally contribute to the blue growth			
Objective 1 – Develop small-scale fisheries whilst minimising the negative impacts of other blue investments			
Targets	Actions	Indicators and time frame	Coordinator and Partnership
Define opportunities for entrepreneurial skills development	Establish opportunities for entrepreneurial growth in fishing communities such as alternative employment and economic diversification including, small to medium sized business development, for particularly for women and youth	Communities benefiting from the opportunities (2020-2063)	C:AU-AIBAR P: MS, academia, Fishing Associations, DEVP
Assess policies coherence in respect of small-scale fisheries to poverty reduction	Identify policy coherence and enhanced linkages between small-scale fisheries, overarching fisheries sectoral policies and strategies and national planning processes for poverty reduction and development	Report produced and approved (2022)	C:AU-AIBAR P: MS, DEVP
Set up all-inclusive management system	Introduce participatory and consultative approaches in all aspects of the fisheries and ensure the involvement of stakeholders in the decision-making process at all levels, including the participation of small-scale fisherfolks	Meetings reports (2020-2063)	C:AU-AIBAR P: MS, NGOs, CSOs, academia, Fishing Associations, DEVP
	Implement co-management with clear roles and responsibilities agreed upon through participatory processes	Co-management in place (2020-2063)	C:AU-AIBAR P: MS, NGOs, CSOs, academia, Fishing Associations, DEVP
Improve fisheries governance through participatory management for inclusive decision-making process	Develop policy and legal frameworks supportive of people's involvement in all aspects of small-scale fisheries	Policies and legal framework produced and approved (2023)	C:AU-AIBAR P: MS, NGOs, CSOs, academia, Fishing Associations, DEVP
Design empowerment mechanisms system	Assess if redistributive reforms can facilitate equitable access to land and fishery resources	Assessment report produced and approved (2022)	C:AU-AIBAR P: MS, NGOs, CSOs, academia, Fishing Associations, DEVP
	Empower stakeholders, in particular small-scale fishing communities by involving them in the designing, planning and implementing protected areas (co-management) in marine and inland waters, or other management measures affecting their livelihoods	Meeting reports (2020-2063)	C:AU-AIBAR P: MS, NGOs, CSOs, academia, Fishing Associations, DEVP

Goal 2 - Achieving full wealth-generating potential for fisheries and aquaculture sector to optimally contribute to the blue growth			
Objective 1 – Develop small-scale fisheries whilst minimising the negative impacts of other blue investments			
Targets	Actions	Indicators and time frame	Coordinator and Partnership
Define measures for data collection, analysis and the rights of access to information for the small-scale fisheries	Built and develop capacity for data collection and analysis on small scale fisheries including strategies for information dissemination.	Training and capacity development report produced (2021-2025)	C:AU-AIBAR P: MS, NGOs, CSOs, academia, Fishing Associations, DEVP
	Guarantee the rights of access to information by small-scale fisheries	The right of access guaranteed (2020-2063)	C:AU-AIBAR P: MS
Define rules for the management of inshore zones to protect the rights of small-scale fisheries	Institute mechanism and strengthen capacity for enforcement of regulations pertaining to the inshore exclusive normally reserved for protection of small-scale fishing operations and for purposes of conservation.	Rules and regulations produced and approved (2021)	C:AU-AIBAR P: MS, DEVP
Select fishing zones for the small-scale fisheries	Establish and enforce exclusive zones for small-scale fishers	Zones in place (2020-2025)	C:AU-AIBAR P: MS
	Introduce selective and location-specific fishing gear	Gear-specific location in place (2020-2025)	C:AU-AIBAR P: MS
Select the fishing practices and policies that offer the most social benefits	Implement the best fishing practices and policies based on social profitability	Best fishing practices and policies in place (2022)	C:AU-AIBAR P: MS, RECs, RFMOs, RFBs, RFOs, industry
Strengthen bilateral and regional cooperation for effective management of shared fishery resources and ecosystems	Assess the need for harmonizing fisheries policies and legal frameworks for shared water bodies or marine living resources	Assessment report produced and approved (2022)	C:AU-AIBAR P: MS, DEVP
Catalogue migration of fishermen	Identify, describe and quantify migratory movements of fishermen outside their EEZ	Identification exercise completed (2025)	C:AU-AIBAR P: MS, RECs, RFB, RFMOs, DEVP
Define decent working conditions	Undertake studies on working conditions	Basic working conditions completed and approved (2024)	C:AU-AIBAR P: MS, RECs, RFMOs, RFBs, RFOs, industry, DEVP
Set up professional organizations	Establish and recognise Fishing Associations	Associations established and recognised (2020-2024)	C:AU-AIBAR P: MS
Apply the provisions of the FAO-International Guidelines for Securing Sustainable Small-scale Fisheries	Implement the guidelines	Guidelines produced, approved and implemented (2020-2063)	C:AU-AIBAR P: MS, DEVP

Goal 2 - Achieving full wealth-generating potential for fisheries and aquaculture sector to optimally contribute to the blue growth			
Objective 1 – Develop small-scale fisheries whilst minimising the negative impacts of other blue investments			
Targets	Actions	Indicators and time frame	Coordinator and Partnership
Fisheries management capacity strengthened in effective tenure system including consideration for equitable allocation systems in small-scale fisheries	Implement user rights-based tools	User rights-based tools produced, approved and implemented (2020-2063)	C:AU-AIBAR P: MS, DEVP

Table 8. Presentation of Objective 2 of Goal 2

Goal 2 - Achieving full wealth-generating potential for fisheries and aquaculture sector to optimally contribute to the blue growth			
Objective 2 – Promote inclusive blue value chain incorporating fisheries sustainable aquaculture, ornamental fisheries and tourism sector			
Targets	Actions	Indicators and time frame	Coordinator and Partnership
Define all possibilities for market-led aquaculture investments	Assess the possibilities for market-led aquaculture investment and make recommendations	Assessment report produced and approved (2021)	C: AU-AIBAR P: MS, DEVP
Setup systems to improve enabling environment for investment in MS	Introduce a value-chain approach to aquaculture development	Value-chain approach introduced (2021)	C: AU-AIBAR P: MS, DEVP
	Develop a database for the sector	Database available online (2023)	C: AU-AIBAR P: MS, DEVP
	Empower small-scale farmers by implementing BMPs and adopting, where possible, cluster-management approach for organizing producers	Evidence of empowerment documented (2020-2063)	C: AU-AIBAR P: MS, DEVP
	Develop frameworks that combine human and institutional capacity development and explicit private sector interventions to support market driven aquaculture development	Framework produced and approved (2020-2063)	C: AU-AIBAR P: MS, DEVP
	Implement Ecosystem Approach to Aquaculture (EAA) management	EAA implemented and documented in annual reports (2020-2063)	C: AU-AIBAR P: DEVP
Domesticate aquaculture strategies and plans into national development plans especially the CAADP	Increase allocation of national budgets to aquaculture	Approved national budget (2020-2063)	C: AU-AIBAR P: MS, DEVP
	Agree on harmonize policy, institutional, legal, regulatory, and monitoring regimes to govern aquaculture operations that occur in waters that go beyond national jurisdiction	Bilateral agreements; RECs, RFOs and Large Marine Ecosystems/commissions minutes (2020-2063)	C: AU-AIBAR P: MS, RECs, RFOs, LMEs projects/commissions, DEVP
	Put in place standards and norms on aquatic animal health: fish disease, safety, quality and traceability	Standards and norms in place and reported in national report (2020-2063)	C: AU-AIBAR P: MS, DEVP
	Implement quarantine measures for the introduction of exotic and genetically modified genomes	Quarantine measures in place and reported in national report (2020-2063)	C: AU-AIBAR P: MS, RECs, DEVP
	Elaborate mechanisms to support and harmonise the activities of regional aquaculture bodies	Report produced and approved (2021)	C: AU-AIBAR P: MS, RECs, DEVP

Goal 2 - Achieving full wealth-generating potential for fisheries and aquaculture sector to optimally contribute to the blue growth			
Objective 2 – Promote inclusive blue value chain incorporating fisheries sustainable aquaculture, ornamental fisheries and tourism sector			
Targets	Actions	Indicators and time frame	Coordinator and Partnership
Set up new production techniques	Implement new and proven production techniques	New production methods in place (2020-2063)	C:AU-AIBAR P:MS,ACEAs, DEVP
Identify skills gaps in private and public sectors to develop strategic plans and their implementation	Carry out training and capacity development interventions to strengthen the capacity of private and public sector in developing realistic plans and in implementing them	Training and capacity development reports; annual reports of private and public sectors (2020-2063)	C:AU-AIBAR P: MS, academia, DEVP
Harmonized and coherent policies, institutional and legal frameworks for aquaculture in shared ecosystems	Put in place harmonised and coherent policies, institutional and legal frameworks	Harmonised policies, institutional and legal framework produced and approved (2020-2063)	C:AU-AIBAR P: MS, DEVP
Establish a viable fisheries and aquaculture SMEs	Conduct a study on the viability of SMEs in fisheries and aquaculture	Studies completed by 2022	C:AU-AIBAR P: MS, DEVP

Table 9. Presentation of Objective 3 of Goal 2

Goal 2 - Achieving full wealth-generating potential for fisheries and aquaculture sector to optimally contribute to the blue growth			
Objective 3 - Achieve a responsible and equitable fish trade and marketing including inclusive inter-regional and cross border fish trade			
Targets	Actions	Indicators and time frame	Coordinator and Partnership
Analyse trade systems between MS in the same RECs	Harmonise regional policies of RECs with national policies	Policies harmonised (2020-2063)	C:AU-AIBAR P: MS, RECs, DEVP
	Establish challenges towards market liberalisation	Report on challenged produced and approved (2021)	C:AU-AIBAR P: MS, RECs, DEVP
	Domesticate WTO agreements focus on removal of trade barrier	National reports (2020-2063)	C:AU-AIBAR P: MS, RECs, DEVP
Identify the factors deterring regional trade	Determine underlying factors deterring regional trade	Report on trade hindrances (2022)	C:AU-AIBAR P: MS, RECs, DEVP
	Monitor production and trade in line with national priorities and international obligations	Report produced and approved (2021-2063)	C:AU-AIBAR P: MS, RECs, DEVP
Develop new products from locally available raw materials	Develop new materials from locally available new materials	New products developed and marketed (2020-2025)	C:AU-AIBAR P: MS, ACEA, academia, DEVP
Develop and market a number of high value-added products	Establish the inventory and estimate the types of products that can be processed and packaged on site	Products produced and marketed (2020-2025)	C:AU-AIBAR P: MS, RECs, DEVP
	Implement secure access rights and improved access to the markets to enhance productivity nutritional and food security contribution of small-scale fisheries	Secure access rights in place (2023)	C:AU-AIBAR P: MS, DEVP
Adopt internationally accepted food safety standards	Carryout a review of safety and quality policies to assess their compliance with OIE WTO and FAO Codex	Review report produced and approved (2022)	C:AU-AIBAR P: MS, RECs, DEVP
	Establish regional accredited food testing laboratories	Laboratories in place (2024)	C:AU-AIBAR P: MS, RECs, DEVP
Design mechanisms for improved intra-regional trade liberalisation	Assess and make recommendations of the elimination of procedural barriers to free trade	Report produced and approved (2023)	C:AU-AIBAR P: MS, RECs, DEVP
	Assess and make recommendations on the elimination of tariff and non-tariff barriers to intra-regional trade	Report produced and approved (2023)	C:AU-AIBAR P: MS, RECs, DEVP
	Assess and make recommendations of the elimination of import levies and export tax	Report produced and approved (2023)	C:AU-AIBAR P: MS, RECs, DEVP

Goal 2 - Achieving full wealth-generating potential for fisheries and aquaculture sector to optimally contribute to the blue growth			
Objective 3 - Achieve a responsible and equitable fish trade and marketing including inclusive inter-regional and cross border fish trade			
Targets	Actions	Indicators and time frame	Coordinator and Partnership
Put in place efficient fish-trade information	Mobilise financial resources to strengthen financial capacity of regional fish trade information organisations	Report produced and approved (2020-2023)	C:AU-AIBAR P: MS, DEVP
Identify options that significantly improve the terms of trade with importing countries, especially in terms of an export grouping	Carry out an in-depth study on improving the terms of trade with importer countries, the advantage to an export grouping and the possibilities of creating such a mechanism	Report produced and approved (2023)	C:AU-AIBAR P: MS, DEVP
Determine the market segment where AU countries have a comparative advantage in processing fish from their waters	Establish an inventory and estimate the type of products that can be processed and packaged on site	Inventory produced (2021)	C:AU-AIBAR P: MS, RECs, DEVP
Develop mechanisms to increase fish consumption within Africa	Conduct national advocacy campaigns on the nutritional value of fish products	Campaigns conducted (2020-2063)	C:AU-AIBAR P: MS, CSO, NGOs, DEVP
Design a national and regional action plan to ensure an adequate nutritional intake by 2030	Determine at national level, the means by which nutritional security from fish can be achieved	Plan of Action drafted with quantitative and qualitative objectives defined (2021)	C:AU-AIBAR P: MS, DEVP
Enhance capacity for traders (small-scale, semi industrial, industrial, trade associations) in aquaculture	Undertake training and capacity development in: fish handling, business, management, processing and book keeping	Periodic training conducted (2020-2063)	C:AU-AIBAR P: MS, academia, ACEA, DEVP
	Built capacity on fish trade facilitation, WTO trade agreements, SPS activity, marketing intelligence, data collection on fish prices and sharing of information	Regular training implemented (2020-2063)	C:AU-AIBAR P: MS, academia, DEVP
	Assess the viabilities on new financial instruments to overcome hurdles of security guarantee requirements to ensure traders have access to micro and macro credit schemes	Assessment report produced (2021)	C:AU-AIBAR P: MS, RECs, DEVP

Goal 2 - Achieving full wealth-generating potential for fisheries and aquaculture sector to optimally contribute to the blue growth			
Objective 3 - Achieve a responsible and equitable fish trade and marketing including inclusive inter-regional and cross border fish trade			
Targets	Actions	Indicators and time frame	Coordinator and Partnership
Improve capacity of MS to implement traceability mechanisms and market-led measures are evaluated and adopted	Introduce eco-labelling	Eco-labelling in place (2020-2025)	C:AU-AIBAR P: MS, DEVP
	Implementation catch certification schemes to help curb IUU fishing	Catch certification schemes in place (2020-2025)	C:AU-AIBAR P: MS, DEVP
	Monitor the EU fish import regulations and create awareness	Awareness done regularly (2020-2063)	C:AU-AIBAR P: MS, EU, DEVP
	Participate in WTO and Codex meetings	Meetings reports (2020-2063)	C:AU-AIBAR P: MS, DEVP
	Invest in strengthening of focal points for sanitary and phytosanitary standards (SPS)	On-going training and capacity development interventions (2020-2063)	C:AU-AIBAR P: MS, DEVP
Develop a common fisheries trade framework	United under a single African Voice at international fora.	Minutes of the meetings (2020-2063)	C:AU-AIBAR P: MS
	Agree on a common position on trade matters	Minutes of the meetings (2020-2063)	C:AU-AIBAR P: MS

Table 10. Presentation of Objective 4 of Goal 2

Goal 2 - Achieving full wealth-generating potential for fisheries and aquaculture sector to optimally contribute to the blue growth			
Objective 4 - Attract and promoting PPP sectors investments and financing for fisheries and aquaculture in order to realise the full potential of the blue growth.			
Targets	Actions	Indicators and time frame	Coordinator and Partnership
Strategies are developed to improve the financial services for the SMEs	Develop strategies to improve the financial services that are offered to SMEs in the fisheries and aquaculture value chains	Strategies developed and approved (2021)	C:AU-AIBAR P: MS, DEVP
	Include the developed strategies contained in CAADP Country Compact Investment Plans	Updated CAADP Country Compact Investment Plans (2020-2023)	C:AU-AIBAR P: MS
Establish an investment fund for SMEs in fisheries and aquaculture.	Establish SME investment fund at national or / and regional levels	The Fund established (2023)	C:AU-AIBAR P: MS, DEVP
	Conduct training and capacity development to help SMEs do profitably undertake their business	Training and capacity development intervention reports (2020-2063)	C:AU-AIBAR P: MS, DEVP
Significantly strengthen PPPs in aquaculture development in many countries	Develop attractive regulatory frameworks for PPP in aquaculture	Regulatory framework produced and approved (2023)	C:AU-AIBAR P:MS, private sector,
	Establish PPPs in aquaculture research	PPP projects and initiatives undertaken (2020-2063)	C:AU-AIBAR P: MS, private sector
Identifying funding opportunities	Conduct regular resources mobilisation including donor conferences	Reports of regular resources mobilisation initiatives (2020-2063)	C:AU-AIBAR P: MS, private sector, DEVP

Table 11. Presentation of Objective 5 of Goal 2

Goal 2 - Achieving full wealth-generating potential for fisheries and aquaculture sector to optimally contribute to the blue growth			
Objective 5 - Accelerate the development of fisheries and aquaculture fish processing and storage capacities within blue economy-related industries			
Targets	Actions	Indicators and time frame	Coordinator and Partnership
Identify technologies for small-scale fisheries in a broad range of areas	Develop capacity in areas such as appropriate fishing technology, fish handling and processing methods, fishing gear (net) technology, business entrepreneurship, boat-building, engineering, planning and implementation of alternative livelihoods programs to support fishing capacity reduction	Training and capacity development report produced (2022)	C: AU-AIBAR P: MS, academia, industry, DEVP
Identify process to produce quality products	Assess and promote investments opportunities in appropriate technology and infrastructures and capacity development programs that enable small-scale post-capture sector, with specific emphasis on women, to produce quality products, both for local markets and exports	Assessment Report produced and approved (2022)	C: AU-AIBAR P: MS, private sector, DEVP

Table 12. Presentation of Objective 6 of Goal 2

Goal 2 - Achieving full wealth-generating potential for fisheries and aquaculture sector to optimally contribute to the blue growth			
Objective 6. Maximise benefits from high seas fisheries			
Targets	Actions	Indicators and time frame	Coordinator and Partnership
Greater African Voice in high seas fisheries	Assess and make recommendations to the AU MS to be party to an appropriate RFMO	Assessment report produced (2022)	C:AU-AIBAR P: MS
	Conduct a study to determine the status of AU-MS in relation to relevant instruments	Status report produced (2022)	C:AU-AIBAR P: MS
	Urge MS to accede to relevant and appropriate instruments	Correspondence to MS	C:AU-AIBAR P: MS
	Formulate a strategy for consultations prior to the meetings of the RFMOs to harmonize positions on key issues	Strategy produced and approved (2021)	C:AU-AIBAR P: MS
	Develop a strategy for MS to actively participate in the ABNJ programme to promote sustainable management of fisheries resources and conservation and protection of biodiversity	Strategy produced and approved (2021)	C:AU-AIBAR P: MS, DEVP
	Develop a strategy for MS to participate in Global Partnership for Oceans	Strategy produced and approved (2021)	C:AU-AIBAR P: MS, DEVP
	Speak with one voice – the African Voice, at high seas fora	Reports of high seas entities (2020-2063)	C:AU-AIBAR P: MS

Table 13. Presentation of Objective 1 of Goal 3

Goal 3 – Ensuring sustainable social, economic, environmental and equitable outcomes and human rights whilst safeguarding natural capital and blue investment			
Objective 1 – Develop communication strategies about blue growth as well as create awareness and develop human capacity			
Targets	Actions	Indicators and time frame	Coordinator and Partnership
Evaluate economic, social and cultural contributions of the fisheries	Conduct a study to evaluate economic, social and cultural contributions of the fisheries	Report produced and approved (2021)	C:AU-AIBAR P: MS, RFMOs, RECs, DEVP
Strengthen the scientific and socio-economic basis for fisheries management and aquaculture development	Built and develop capacity for fisheries and aquaculture research, including data collection and analysis	Training reports (2020-2063)	C:AU-AIBAR P: MS, academia, DEVP
	Apply scientific advice into management planning, gathering of information and information management, and assessment of Climate Change Adaptation (CCA)/mitigation in fisheries and aquaculture	National annual reports (2020-2063)	C:AU-AIBAR P:MS
	Conduct research on the use of green energy in fisheries and aquaculture development	Report on green energy use (2023)	C:AU-AIBAR P: MS, DEVP
Increase research and dissemination of better practices	Conduct research and development (R&D) through increased funding	R&D annual reports (2020-2063)	C:AU-AIBAR P: MS, academia, DEVP
Increase awareness of opportunities for capacity development to deliver on sustainable and inclusive blue growth	Develop a communication strategy	Number of communication strategies developed and adopted for implementation (2021)	C:AU-AIBAR P: MS, DEVP
	Develop awareness materials and tools	Number and type of awareness materials and tools developed (2021-2022)	C:AU-AIBAR P: MS, DEVP
	Implement the communication strategy and awareness raising activities	Number of awareness interventions/ activities (workshops, trainings, materials disseminated) (2020 onwards)	C:AU-AIBAR P:MS, NGOs, CSOs
	Support/Strengthen regional, national and community networks	Number of the networks in place and functional (2021-2022)	C:AU-AIBAR P: MS, DEVP
	Conduct skills gap assessment across the entire fisheries/ aquaculture value chain (including government, private sector, non-state actors and fishing communities, fish farmers)	Gaps/ Needs in the skills/ capacity identified and addressed ((2020-2022)	C:AU-AIBAR P: MS, DEVP
	Document and share best practices on local and traditional knowledge in fisheries management and aquaculture development through collaboration at local, national, regional and global level	Report on local and traditional knowledge and best practices (2020-2022)	C:AU-AIBAR P: MS, Fishing Associations

Goal 3 – Ensuring sustainable social, economic, environmental and equitable outcomes and human rights whilst safeguarding natural capital and blue investment			
Objective 1 – Develop communication strategies about blue growth as well as create awareness and develop human capacity			
Targets	Actions	Indicators and time frame	Coordinator and Partnership
	Integrate local and traditional knowledge in fisheries management and aquaculture development	Number of fisheries management plans that integrate local and traditional knowledge prepared and implemented. (2020-2022)	C:AU-AIBAR P: MS
Develop mechanisms for dissemination and sharing of best management practices	Develop communication strategy and guidelines for managing aquatic ecosystems	Communication strategy produced (2022)	C:AU-AIBAR P: MS, DEVP
Create an African Centre of Excellency for Aquaculture (ACEA)	Conduct a feasibility study for ACEA	Feasibility study report produced and approved and recommendations implemented (2020)	C:AU-AIBAR P: MS, RECs, DEVP
	ACEA conducts research and provide advice	Advice from 2021 onwards	C:AU-AIBAR P: MS, RECs, DEVP
	ACEA serves as knowledge repository and contribute in sharing knowledge through training and certifications and capacity building	ACEA annual reports (2022-2063)	C:AU-AIBAR P: MS, ACEAs
	ACEA strengthen aquaculture research and technology development and policy networks, through AfriFishNet and ANAF respectively	Quarterly and annual reports (2022-2063)	C:AU-AIBAR P: MS, ACEAs, DEVP
Identify specific priority training and capacity development interventions	Carryout training and capacity development in priority areas such as fisheries management planning, fishing management, regional cooperation, fisheries economic, stock assessments, human rights-based approaches to management,	Report on training and capacity development interventions undertaken (2021-2063)	C:AU-AIBAR P: MS, academia, DEVP

Table 14. Presentation of Objective 2 of Goal 3

Goal 3 – Ensuring sustainable social, economic, environmental and equitable outcomes and human rights whilst safeguarding natural capital and blue investment			
Objective 2. Ensure security of investment of fisheries and aquaculture			
Targets	Actions	Indicators and time frame	Coordinator and Partnership
Identify investment options in small-scale fisheries to address poverty and contribute to nutritional and food security	Assess investments that favour economic growth for actors in the small-scale sector by focusing on sustainability of the resources in order to address poverty and contribute to nutritional and food security	Assessment report produced and approved (2022)	C:AU-AIBAR P: MS, RECs, DEVP
Assess social cost/benefit of fisheries management plans	Develop fisheries management plans and legislative frameworks for all stocks and Action Plans to support the implementation of specific elements of the plan at local national sub-regional and regional levels	Management Plans and frameworks developed, approved and implemented (2020-2025)	C:AU-AIBAR P:MS, RECs, DEVP
Establish fund for accelerate development of aquaculture at regional level	Conduct resource mobilization to aquaculture development at accelerated pace	Funds mobilised (2020-2063)	C:AU-AIBAR P: MS, DEVP
Set up policies, procedures and mechanisms to ensure security of investment in the sector	Implement legal frameworks that, among other things, protect rights to the property and proceeds	Effective implementation (2020-2023)	C:AU-AIBAR P: MS, DEVP
	Put in place policies that facilitate access to capital and other productive resources including secured land and tenure systems	Policies produced and in force (2020-2063)	C:AU-AIBAR P: MS, DEVP
	Develop and apply strategies to encourage financial incentives and investments including tax exemptions	Strategy produced and approved (2021)	C:AU-AIBAR P: MS, DEVP
	Put in place mechanisms for improved marketing systems and quality control including certification schemes	A new scheme in place (2021)	C:AU-AIBAR P: MS, RECs, DEVP
	Establish sustained funding sources for research, innovation and extension services	Report on sustainable funding (2021)	C:AU-AIBAR P: MS, DEVP

Table 15. Presentation of Objective 3 of Goal 3

Goal 3 – Ensuring sustainable social, economic, environmental and equitable outcomes and human rights whilst safeguarding natural capital and blue investment			
Objective 3. Create safe working conditions and security			
Targets	Actions	Indicators and time frame	Coordinator and Partnership
Assess the safety of small-scale fishers at sea	Carryout the implementation of strategies for safety at seas operations and develop conflict resolution mechanisms to facilitate resolution of issues at water basin or local levels	Safety at sea strategies developed and implemented (2021-2024) Conflict resolution mechanisms for water basins developed, approved and implemented (2022)	C:AU-AIBAR P: MS, fishing industry, DEVP
	Develop national and regional strategies and intervention plans to combat piracy at a sea	National and regional strategies produced and approved (2021) Intervention plan produced and approved (2021)	C:AU-AIBAR P: MS, DEVP
Establish monitoring and information system for inland waters	Develop an inland water monitoring and information systems	Monitoring system produced, approved and implemented (2023)	C:AU-AIBAR P: MS, RFOs, DEVP
Eradicate acts of piracy	Define a joint intervention plan between MS concerned and entities capable of providing logistical, military and technical support	Intervention plan produced and approved (2022)	C:AU-AIBAR P: MS, DEVP

Table 16. Presentation of Objective 4 of Goal 3

Goal 3 – Ensuring sustainable social, economic, environmental and equitable outcomes and human rights whilst safeguarding natural capital and blue investment			
Objective 4 – Strengthen resilience and reducing vulnerability to climate change			
Targets	Actions	Indicators and time frame	Coordinator and Partnership
Enhancing information, knowledge and communication systems	Prepare and regularly disseminate relevant information to the fishing communities on the impacts of climate change and climate variability and on adaptation and mitigation strategies	Regular updates on climate change (2020-2063)	C:AU-AIBAR P: MS, DEVP
Incorporate marine and continental environments into NAPA for climate change	Include the ecosystems into NAPA	NAPA including aquatic ecosystems (2020-2063)	C:AU-AIBAR P: MS, DEVP
Implement NAPA	Implement NAPA	NAPA implemented (2020-2063)	C:AU-AIBAR P: MS, DEVP
Building adaptive capacity at the local level	Assess vulnerability of coastal ecosystems, including communities, to climate change/ variability	Assessment report (2022)	C:AU-AIBAR P: MS, DEVP
	Develop early-warning systems (EWS) for extreme events	EWS in place (2025)	C:AU-AIBAR P: MS, LME projects/ commissions, academia, DEVP
	Prepare climate adaptation plans for coastal infrastructure developments	Adaptation Plans (2023)	C:AU-AIBAR P: MS, DEVP
	Research the likely effects of climate variability and climate change on productivity	Research report (2022)	C:AU-AIBAR P: MS, DEVP
	Document the likely regional impacts of climate change and variability in order to predict and enable management to adapt accordingly	Scenario report produced (2022)	C:AU-AIBAR P: MS
Establish adaptation measures	Setup aquaculture zoning to minimise risks and relocation to new exposed sites	Zones declared (2020-2025)	C:AU-AIBAR P: MS, DEVP
	Increase efficiency of water use, water recycling and introduce aquaponics	Efficiency recorded	C:AU-AIBAR P: MS, DEVP
	Develop better adapted seed stocks	Research reports (2020-2063)	C:AU-AIBAR P: MS, DEVP
Assess vulnerability of natural barriers	Assess the effectiveness of natural barriers to provide first line of protection from storm surges and flooding	Assessment report (2022)	C:AU-AIBAR P: MS, DEVP
Develop mitigation and climate change adaptation projects	Carryout mitigation and adaptation projects	Projects undertaken (2020-2063)	C:AU-AIBAR P: MS, DEVP
Improving policy coherence and coordination at the national and regional levels	Find ways for active participation of stakeholders including communities in climate change programmes	Documented evidence of stakeholders' participation (2020-2063)	C:AU-AIBAR P: MS, NGOs, CSOs

Goal 3 – Ensuring sustainable social, economic, environmental and equitable outcomes and human rights whilst safeguarding natural capital and blue investment			
Objective 4 – Strengthen resilience and reducing vulnerability to climate change			
Targets	Actions	Indicators and time frame	Coordinator and Partnership
Record all ecosystem services and the uses of the marine environment, estimate their value and assess the present and future challenges	Estimate a list of ecosystem services based on the MEA nomenclature	Inventory produced (2024)	C:AU-AIBAR P: MS, RFOs, LME projects/commissions, DEVP
	Assess the value of ecosystem services and the uses of the marine and coastal environment	Estimate of the value of the marine ecosystem produced (200-2025)	C:AU-AIBAR P: MS, RFOs, LME projects/commissions, DEVP
	Identify present and future challenges and intervention priorities based on the value and stakes involved	Report on the challenges and opportunities identified (2024)	C:AU-AIBAR P: MS, RFOs, LME projects/commissions, DEVP
Define governance of the marine and coastal ecosystems	Develop ecosystem governance at national and regional levels	Effective governance of all AU MS in place (2020-2025)	C:AU-AIBAR P: MS, RFOs, LME projects/commissions, DEVP

Table 17. Presentation of Objective 5 of Goal 3

Goal 3 – Ensuring sustainable social, economic, environmental and equitable outcomes and human rights whilst safeguarding natural capital and blue investment			
Objective 5 - Empower women and youth in fisheries and aquaculture in order to take full advantage for blue growth			
Targets	Actions	Indicators and time frame	Coordinator and Partnership
Inclusion of women and youth in relevant fisheries policies and laws	Review and develop gender sensitive and inclusive policies and legislation	Number of policies reviewed and adopted (2020-2021)	C:AU-AIBAR P: MS, CSOs, NGOs, women organisations, DEVP
Define empowerment criteria for actors	Establish criteria for preferential treatment for all actors (women and youths in particular) in providing services, and in instituting rights.	Report on criteria produced and approved (2022)	C:AU-AIBAR P: MS, DEVP
Assess progress towards gender parity	Develop harmonised procedures and collect gender-disaggregated sector data, by age and occupational categories and use it to inform policy and programmes	Number of tools for collecting gender-disaggregated data (2020)	C:AU-AIBAR P: MS, DEVP
	Prioritize and develop financing and credit products/ services that target women and youth.	Number of financing products/ credit facilities that target women (2021)	C:AU-AIBAR P: MS, DEVP
	Develop effective participation mechanisms and structures for women and youth in decision-making processes, design and implementation at all levels	Number of structures/ mechanisms	C:AU-AIBAR P: MS, CSOs, NGOs, women and youth organisations, DEVP
	Implement inter-sectoral approaches and partnerships for empowering women and youth	From 2020 onwards	C:AU-AIBAR P: MS, DEVP
	Develop and implement actions to prevent gender-based violence	Report produced and approved (2020)	C:AU-AIBAR P: MS, DEVP
	Monitor and report child labour in order to eliminate it	From 2020 onwards	C:AU-AIBAR P: MS, DEVP
	Re-skill the youths so that they can get decent youth employment	From 2020 onwards	C:AU-AIBAR P: MS, DEVP
	Develop new financial instruments to overcome hurdles of security guarantee requirements by the financial institutions	2021 onwards	C:AU-AIBAR P: MS, DEVP

Table 18. Presentation of Objective 6 of Goal 3

Goal 3 – Ensuring sustainable social, economic, environmental and equitable outcomes and human rights whilst safeguarding natural capital and blue investment			
Objective 6 - Rehabilitate and or secure threaten fishing grounds/zones, prevent land-based pollution and degradation of aquatic environments			
Targets	Actions	Indicators and time frame	Coordinator and Partnership
Rehabilitate degraded fishing grounds / zones	Assess degraded fishing grounds / zones and implement rehabilitation measures	Assessment report (2024)	C:AU-AIBAR P : MS, DEVP
	Assess the introduction of marine protected areas (MPAs)	Assessment report (2024)	C:AU-AIBAR P : MS, DEVP
Evaluate socio-economic impacts of by-catches	Implement EAF management that account for ecological interactions including by-catches	EAF management regime in place (2023)	C:AU-AIBAR P: MS, DEVP
Monitor and manage water quality around pollution 'hotspot' locations.	Identify pollution 'hotspots' and implement pollution monitoring programmes	Report produced and approved (2024)	C:AU-AIBAR P : MS, DEVP
	Put mitigation measures to prevent and abate pollution	Measures in place (2024)	C:AU-AIBAR P: MS, DEVP
Accede and implement pollution-related instruments	Implement national, regional and international pollution-related instruments	On-going (2020-2063)	C:AU-AIBAR P: MS, DEVP
Assess environmental impact of fisheries and aquaculture against socio-economic gains	Prepare a cost-benefit analysis of the fisheries and aquaculture to assess its environmental impact against socio-economic benefits	Cost-benefit Report produced and approved (2024)	C:AU-AIBAR P: MS, DEVP

References

1. AU (2012). 2050 Africa's Integrated Maritime Strategy (2050 AIM Strategy). AU, Addis Ababa, Ethiopia. 32 pp.
2. AUC and NPCA (2014). The Policy Framework and Reform Strategy for Fisheries and Aquaculture in Africa. AU-IBAR, Nairobi. 96 pp.
3. AU-IBAR (2019). A guide for developing and implementing Public-Private Partnership models for sustainable fisheries and aquaculture development in Africa. AU-IBAR, Nairobi, Kenya. 32 pp
4. AU-IBAR (2019). Framework for Rational Fisheries Management Plans for Selected Inland Water Bodies in Northern Region of Africa. AU-IBAR Reports. AU-IBAR, Nairobi, Kenya. 22 pp.
5. AU-IBAR (2018). Framework for harmonized minimum terms and conditions for fisheries access in the African Union Member States – Preceded by section on methodology and process for assessing fisheries management measures for regulating shared stocks. AU-IBAR Reports. AU-IBAR, Nairobi, Kenya. 70 pp
6. AU-IBAR (2018). Impact of international fish trade flows in Africa. AU-IBAR Reports. AU-IBAR, Nairobi, Kenya. 80 pp.
7. AU-IBAR (2018). Policy Brief: Enhancing Public-Private Sector Partnerships (PPP) in Fisheries and Aquaculture. AU-IBAR, Nairobi, Kenya. 7 pp.
8. AU-IBAR (2016). Fisheries Management and Development Processes in Lake Victoria - Enhancing Regional Fisheries Management Plan. AU-IBAR Reports. AU-IBAR, Nairobi, Kenya. 37 pp.
9. AU-IBAR (2016). Management and Development Processes in the Zambezi Watercourse - Integrating Fisheries within Zambezi Basin Strategic Plan. AU-IBAR Reports. AU-IBAR, Nairobi, Kenya. 29 pp.
10. AU-IBAR (2016). Economic, Social and Environmental impact of Illegal, Unreported and Unregulated Fishing in Africa. AU-IBAR Reports. AU-IBAR, Nairobi, Kenya. 194 pp.
11. AU-IBAR (2016). Fisheries Management and Development Processes in Lakes Edward and Albert - Developing a Fisheries Management Plan. AU-IBAR Reports. AU-IBAR, Nairobi, Kenya. 34 pp.
12. AU-IBAR 2016. Fisheries Management and Development Processes in Lake Tanganyika - Enhancing the Fisheries Management Plan. AU-IBAR Reports. AU-IBAR, Nairobi, Kenya. 36 pp.

13. AU-IBAR (2015). Review of previous and current fisheries agreements concluded by some African Union Member States in West and Central Africa. AU-IBAR Reports. AU-IBAR, Nairobi, Kenya. 74 pp.
14. AU-IBAR (2015). Fisheries Management and Development issues in selected Inland Water Bodies in West and Central Africa. AU-IBAR Reports. AU-IBAR, Nairobi, Kenya. 235 pp.
15. AU-IBAR (2015). A Guide for the Implementation of the Policy Framework and Reform Strategy for Fisheries and Aquaculture in Africa, Nairobi, Kenya. 40 pp.
16. AU-IBAR (2013). An industry assessment of tilapia farming in Egypt. AU-IBAR, Nairobi, Kenya. 81 pp.
17. AU-IBAR (2013). Catfish aquaculture industry assessment in Nigeria. AU-IBAR, Nairobi, Kenya. 96 pp.
18. Béné, C., S. Devereux, and K. Roelen. 2015. Social protection and sustainable natural resource management: initial findings and good practices from small-scale fisheries. FAO Fisheries and Aquaculture Circular No. 1106. FAO, Rome, Italy. 72 pp.
19. B.P. Satia. 2016. An overview of Large Marine Ecosystem programs at work in Africa today. *Environmental Development* 17: 11-19 pp.
20. Beyens, Y., P. Failler, and B. Asiedu. 2017. Institutional challenges and constraints for Ghana in exporting fishery products to the European Union. *Food Reviews International*, DOI:
21. Binet, T., P. Failler, and A. Thorpe. 2012. Migration of Senegalese fishers: a case for regional approach to management. *Maritime Studies* 11: 1. www.maritimestudiesjournal.com/content/11/1/1
22. Chan, C.Y., N. Tran, S. Pethiyagoda, C.C. Crissman, T.B. Sulser, and M.J. Phillips. 2019. Prospects and challenges of fish for food security in Africa. *Global Food Security* 20: 17-25 pp.
23. De Graaf, G. and Garibaldi, L (2014). The Value of African Fisheries. FAO Fisheries and Aquaculture Circular No. 1093. Rome. 76 pp.
24. Ehler, C., and F. Douvère. 2009. Marine Spatial Planning: a step-by-step approach toward ecosystem-based management. Intergovernmental Oceanographic Commission and man and the biosphere Programme. IOC Manual and Guides No. 53, ICAM Dossier No. 6. UNESCO-IOC, Paris, France. 99 pp.
25. Failler P (2014). Climate Variability and Food Security in Africa: The Case of Small Pelagic Fish in West Africa. *J Fisheries Livest Prod* 2: 122. Do; 10.4172/2332-2608.1000122. <http://dx.doi.org/10.4172/2332-2608.1000122>.
26. FAO (2018). The State of World Fisheries and Aquaculture – Meeting the Sustainable Development Goals. FAO, Rome, Italy. 227 pp.

27. FAO (2018). The State of Food Security and Nutrition in the World. Building Climate Resilience for Food Security and Nutrition. FAO, Rome, Italy. 202 pp.
28. FAO (2017). Trade in Fish and Fishery Products No. 28. FAO Trade and Markets Division (EST), FAO, Rome, Italy. <http://www.fao.org/3/a-i8003e.pdf>.
29. FAO (2016). FAO Yearbook. Fishery and Aquaculture Statistics. FAO, Rome, Italy. 108 pp.
30. ICC International Maritime Bureau Piracy and Armed Robbery Against Ships. 2018. Report for a period 1 January – 31 December 2018. Cinnabar Wharf. 26 Wapping High Street. London. EIW ING. United Kingdom. www.icc-ccs.org. 68 pp.
31. IPBES (2018): Summary for policymakers of the regional assessments report on biodiversity and ecosystem services for Africa of the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services. E.Archer et al. (eds.). IPBES secretariat, Bonn, Germany. 49 pp.
32. NEPAD (2005). Fish for All. Inland Fisheries in Africa: Key Issues and Future Investment Opportunities for Sustainable Development. Technical Review Paper – Fish for All Summit 22-25 August 2005 Abuja, Nigeria. AUDA-NEPAD, Johannesburg, South Africa. 77 pp.
33. Population of Africa (2019): <https://www.worldometers.info/world-population/africa-population/>
34. Report Number 83177-GLB. The World Bank, 1818 H Street NW, Washington, DC 20433, USA. 102 pp.
35. Sherman, K, and H. Hamukuaya. 2016. Sustainable development of the world's Large Marine Ecosystems. Environmental Development 17(2016). 1-6 pp. The ACP Secretariat's Strategic Action Plan on Fisheries and Aquaculture 2011-2015. African, Caribbean and Pacific Group of States (ACP Group), <http://www.acp.int>.
36. Theuri, F.S., F.M. Mwirigi, and G. Namusonge. 2014. Determinants of Value Addition in the Seafood Industry in Developing Countries: An Analysis of the Kenyan Context. IOSR Journal of Business and Management (IOSR-JBM) e-ISSN: 2278-487X, p-ISSN: 2319-7668. Volume 16, Issue 1. Ver. VII (Feb. 2014). 17-25 pp. 10.1080/87559129.2017.1289386. <http://dx.doi.org/10.1080/87559129.2017.1289386>
37. United Nations Convention on the Law of the Sea. 1982. https://www.un.org/depts/los/convention_agreements/texts/unclos/unclos_e.pdf. Division for Ocean Affairs and the Law of the Sea. UN Headquarters, New York, USA. 202 pp.
38. Wambua, M.M. 2018. A cost–benefit analysis of the fish farming enterprise productivity program project in Kenya. The case of implementation of the aquaculture development component in Meru County. United Nations University, Fisheries Training Programme, Reykjavik, Iceland. 38 pp.

39. Weirowski, F., and S.J. Hall. 2008. Public-private partnerships for fisheries and aquaculture: Getting started. WorldFish Center Manual number 1875. The WorldFish Center, Penang, Malaysia. 18 pp.
40. World Bank (2013). FISH TO 2030. Prospects for Fisheries and Aquaculture. World Bank
41. World Bank and United Nations Department of Economic and Social Affairs (2017). The Potential of the Blue Economy: Increasing Long-term Benefits of the Sustainable use of Marine Resources for Small Island Developing States and Coastal Least Developed Countries. The World Bank, 1818 H Street NW, Washington, DC 20433, USA. 50 pp.
42. World Bank (2017). The Sunken Billions Revisited Progress and Challenges in Global Marine Fisheries. The World Bank, 1818 H Street NW, Washington, DC 20433, USA. 117 pp.



African Union - Inter-African Bureau for Animal Resources
(AU-IBAR)

Kenindia Business Park
Museum Hill, Westlands Road
PO Box 30786

00100 Nairobi, Kenya.

Tel: +254 (20) 3674 000

Fax: +254 (20) 3674 341 / 3674 342

Email: ibar.office@au-ibar.org

Website: www.au-ibar.org