

NATIONAL BLUE ECONOMY STRATEGY OF ETHIOPIA

2023-2027



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MINISTRY OF TRANSPORT AND LOGISTICS

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ACROMYMS

AIM	African Strategy of the Integrated Maritime sector
AU	African Union
AUC	African Union Commission
BE	Blue Economy
EEZ	Exclusive Economic Zones
EMTI	Ethiopian Maritime Training Institute
ETB	Ethiopian Birr
FAO	Food and Agriculture Organization
GDP	Gross Domestic Product
GLFC	Great Lakes Fishery Commission
IGAD	Intergovernmental Authority on Development
LVFO	Lake Victoria Fisheries Organisation
MoU	Memorandum of Understanding MSC
MSC	Mediterranean Shipping Company
MSY	Maximum Sustainable Yield
NBEC	National Blue Economy Coordination Platform
NBI	Nile Basin Initiative
PFRS	Policy Framework and Reform Strategy for Fisheries and Aquaculture in Africa
SCS	Self-Contained System
SDGs	Sustainable Development Goals
TWh	Terra Watt Hour
UNCLOS	United Nations Convention of the Law of the Sea
UNCSD	United Nations Conference on Sustainable Development
UNCTAD	United Nations Conference on Trade and Development
USD	United States Dollar
WTTC	World Travel & Tourism Council's
WWF	World Wildlife Fund for Nature

EXECUTIVE SUMMARY

Indeed, Ethiopia is a landlocked country since 1991 located in the Horn of Africa. Moreover, the economic growth of the country is jeopardized by agricultural market fluctuations and recurrent droughts. Part of the solution lays in diversification of the production systems that fully utilize the available water resources.

In order to make the best use of the BE resources, Ethiopia develops this strategy to set the stage for implementation. This if well implemented will put Ethiopia among the top non-coastal countries with a high BE based economic development. The strategy identified challenges and outlined potential intervention objectives and goals, of which a detailed program of actions should be developed for implementation after adoption of the Strategy. In order to facilitate the realization of blue economy potential, the strategy also outlines blue economy governance framework, which provides how the blue economy needs to be governed for optimal economy benefits. Moreover the strategy will be the road map to develop the Blue Economy of the country and will be a tool to mobilize resources to develop the sectors.

Considering the BE opportunities and challenges, the strategy identified four strategic goals. The strategic goals in which the Government of Ethiopia needs to be implemented and ensure their integration in the blue economy program of actions include:

- » **Strategic Goal 1:** Establish functional blue economy governance policy and investment framework, regulations and coordination mechanisms
- » **Strategic Goal 2:** Identify, Develop and Implement Blue Economy Priority Program of Actions at Sectoral level.
- » **Strategic Goal 3:** Create empowerment and inclusive decision making, Environmental Sustainability, and Economic Viability Conditions.
- » **Strategic Goal 4:** Accelerate the Exploitation of Blue Economy Sectors and Industries through Innovation, Research and Development.

The strategy provides roles and responsibilities of participating institutions where they are provided the responsibility to contribute and coordinate their respective sectoral blue economy under the auspices of the governing body.

The implementation plan will provide the steps that need to be undertaken to realize the successful implementation of the strategy including governance, capacity building, outreach, program of action and monitoring, evaluation, and reporting.

PART 1

BLUE ECONOMY CONCEPT AND ETHIOPIA

Blue Economy Situation Analysis

1.1 Blue Economy Background:

Concepts, approaches, definitions and progress

The “Blue Economy” includes all activities developing or deriving from marine and aquatic ecosystems including oceans, coasts, seas, rivers, lakes, groundwater, and associated resources. It consists of the clever use of sea and its resources for sustainable economic development. From current scientific research and findings, it's evident that ocean and other aquatic resources are limited and that the health and quality of oceans resources has declined drastically due to anthropogenic activities. These changes are already felt in a profound way, through effects for human well-being and societies, and the corresponding impact is most likely going to be increased in the future due to population growth.

The “Blue Economy” concept aims at promoting economic growth, social inclusion, and the preservation or improvement of livelihoods, while at the same time, ensuring environmental sustainability of oceans and coastal areas. It is regarded as the combination of socio-economic development activities with safeguards against environmental degradation and optimization of benefits which may be derived from marine resources. It covers all water instances, including lakes and rivers, in addition to oceans and the coast. The main sectors of concerned economic activities are fisheries, aquaculture, tourism, transport, ports, energy and mining with many links to other sectors.

Globally, the concept of Blue Economy has attracted various approaches, scope and definitions adopted by various global institutions. It's relatively a recent concept, used since the United Nations Conference on Sustainable Development (UNCSD) in Rio de Janeiro in June 2012. In this context, one may quote definitions that in addition to United Nation include those adopted by the World Bank, the European Commission, The Commonwealth of Nations, Conservation International, and The Centre for the Blue Economy and World Wildlife Fund for Nature (WWF).

These definitions are presented below:

- » The United Nations defines the Blue Economy as an economy that "comprises a range of economic sectors and related policies that together determine whether the use of ocean resources is sustainable. An important challenge of the Blue Economy is to understand and better manage the many aspects of oceanic sustainability, ranging from sustainable fisheries to ecosystem health to preventing pollution".
- » World Bank focuses on the use of the oceans and seas for sustainable economic development: “The blue economy is the sustainable use of ocean resources for economic growth, improved livelihoods and jobs, and ocean ecosystem health”. In this definition, the Blue Economy can be seen as a subset of the Green Economy.
- » The European Commission defines it as "All economic activities related to oceans, seas and coasts. It covers a wide range of interlinked established and emerging sectors."
- » The Commonwealth of Nations considers it "an emerging concept which encourages better stewardship of our ocean or 'blue' resources."

As it concerns IGAD, the definition of Blue Economy is more inclusive and wider in scope. As such it's directly inspired by the concept of the UNECA, namely "The Blue Economy covers both aquatic and marine areas, including oceans, seas, coastlines, lakes, rivers and groundwater. It encompasses a range of productive sectors, including fisheries, aquaculture, tourism, transport, shipbuilding, energy, bio prospecting, mining underwater and related activities".

The fundamental principles of Blue Economy that are implied in its definition are as follow:

- » Promotion of sustainable use, and management of aquatic ecosystems and associated resources through a multi-sectoral approach and clustering, with a special focus on value addition, job creation, skills acquisition, broad-based technology and on building links between the Blue Economy and other sectors;

- » Optimization of socio-economic benefits received from the sustainable development of aquatic environments and the participation of stakeholders at all levels and at all stages for inclusive growth including gender equality, and enhanced food security;
- » Conservation of aquatic ecosystems and associated resources through reduction of threats and impacts from climate change and natural disasters;
- » Attainment of the Sustainable Development Goals (SDGs).

Thus, an important challenge of the “Blue Economy” is to understand and better manage the many aspects of ocean and inland waters sustainability, ranging from sustainable fisheries to ecosystem health to pollution.

As effective ocean governance is fundamental for maintaining ocean’s health and encouraging the growth of a sustainable Blue Economy, there is a necessity to support efforts for progress towards the achievement of global targets such as the Sustainable Development Goals (SDGs) in order to provide direct benefits for human wellbeing. In this context, the need to balance the economic, social, and environmental dimensions of sustainable development with the respect and safeguard of oceans and aquatic ecosystems is a key consideration for the development of the Blue Economy.

Ocean and Blue Economy policy landscape are evolving at a high pace. In this regard there are some important developments even in Africa such as Africa’s Blue Economy. The development of the Blue Economy is an integral part of the Agenda 2063 of the African Union (AU) and was unanimously declared ‘Africa’s future’: “Africa’s Blue Economy shall be a major contributor to continental transformation and growth, advancing knowledge on marine and aquatic biotechnology, the growth of an Africa-wide shipping industry, the development of sea, river and lake transport and fishing; and exploitation and beneficiation of deep-sea mineral and other resources”.

African Union Member States have encouraged the establishment of necessary institutions and strengthening of their capacity to exploit the potential of Blue Economy (e.g. the Blue Economy in certain Eastern African countries contributes as much as 27% of total revenues and 33% of total export revenues). Maritime zones under Africa’s jurisdiction total about 13 million square kilometres, including territorial seas and Exclusive Economic Zones (EEZ) and approximately 6.5 million square kilometres for the continental shelf (for which countries have jurisdiction over the seabed only). The lacustrine (or lake) zones of Africa cover approximately 240,000 square kilometers. The AU adopted the African Strategy of the Integrated Maritime sector (AIM) and launched in July 2015, the African Decade (2015–2025) of the seas and oceans (Note that 52 African states are coastal or island states).

The AU plays a crucial role in developing and implementing the Blue Economy policy and strategy in the African region. Over the past decade, the African Union Commission (AUC) has built an Africa-wide consensus regarding the role that the Blue Economy could play in Africa development prospects during the next decade. This consensus is materialised in the African Union’s 2050 Africa’s Integrated Maritime Strategy (AU 2050 AIMS), which describes the Blue Economy as the “new frontier of African Renaissance.” Moreover, the Blue Economy is at the centre of the AU’s Agenda 2063, identified as “Africa’s future” and recognized as a catalyst for socioeconomic transformation.

The Blue Economy is part of African and global policies, including: the 2014 Africa’s Integrated Maritime Strategy (2050 AIMS); the 2014 Policy Framework and Reform Strategy for Fisheries and Aquaculture in Africa (PFRS); the 2016 African Charter on Maritime Security and Safety and Development in Africa (Lomé Charter), the 2015 UN Agenda 2030 (Sustainable Development Goals, SDGs) and more others.

In support of the Blue Economy in Africa several initiatives have been taken at the international level of public and private organizations such as; the African Development Bank proposal for the creation of a platform for African countries to discuss ways to work together in developing Blue Economies, putting this strategy at the forefront of discussions on the continents’ economic future.

In the IGAD region, the Blue Economy can be the source of a great potential for accelerating structural transformation and creating inclusive and sustainable growth. All member states have started to implement Blue Economy policies in their respective national development strategies. Notwithstanding difficulties of comparison of individual levels of implementation for each member state due to their inherent differences in their national strategies and action plans implemented the Blue

Economy strategy, initiated by IGAD through Blue Economy Strategy and Implementation Plan (BESIP), aims at supporting the development of Blue Economy in all member states with a common framework of goals and objectives to be achieved in the future.

In addition, IGAD is working as catalyst through engagement in trans-boundary initiatives and projects such as:

- » Nile Basin Initiative (NBI), which is a regional intergovernmental partnership that aims at developing the River Nile in a co-operative manner, sharing of substantial socio-economic benefits and promoting regional peace and security amongst eleven participating countries.
- » Lake Victoria Fisheries Organisation (LVFO), and The Great Lakes Fishery Commission (GLFC), which are regional organisations tackling decreasing levels of fish production, habitat loss and invasive species, while integrating
- » land-use decisions into ecosystem management and addressing the negative effects of globalisation and many others.

In conclusion, for IGAD member states as well as for Africa in general, the Blue Economy can contribute in the region capacity to address long-term challenges, which result from globalisation, climate change and pressure on finite natural resources, and have different nature and implications such as economic, environmental or social.

After the first global conference on BE held in Nairobi, Kenya 2018, countries and regions particularly IGAD member states embarked on the development of individual National BE Report in 2021. Such individual National Blue Economy Reports aimed highlighting BE opportunities as well as specifying the challenges to ensure better sustainable management policies for the overall BE goal. And finally; following the BE Conference held in Nairobi, Kenya, 2018; the African Blue Economy Strategy was developed and endorsed in October 2019 by the 3rd Session of the Specialized Technical Committee on Agriculture, Rural Development, Water and Environment and adopted by the heads of States in early February 2020. On April 1, 2022, Five year IGAD BE Strategy approved by IGAD Minister in Addis Ababa and Ministers advised IGAD to support all MS in developing their national BE Strategy.

1.2 Genesis of Blue Economy in Ethiopia

Ethiopia is a landlocked country since 1991 located in the Horn of Africa. Besides, the economic growth of the country persistently jeopardized by agricultural market fluctuations and recurrent droughts. Part of the solution lays in diversification of the production systems that fully utilize the available water resources.

The genesis of BE in Ethiopia takes us back to the initiatives taken by Ethiopian Maritime Authority in 2018. The new emerging development paradigm of the Blue Economy in the country was seen from Marine Economy perspective. Indeed gradually the situation shifts to re-evaluate its development pathway, taking into account other sectors such as hydro power, Fishery, Blue tourism, and water based mineral extraction.

HE, the then Ethiopian foreign Affairs Minister and the current IGAD executive secretary Dr. Workneh Gebeyehu stated about BE during the sustainable Blue Economy Conference in Nairobi “In addition to its national green economic goal, Ethiopia has joined the blue economy geared at supporting sustainable economic growth through water bodies’ activities and preserving the environment. HE further noted that the world rally around the enormous pressures facing oceans and waters at the same time. There is international recognition that “we need to develop our waters in an inclusive and sustainable manner for the benefit of current and future generations.” He further underlined the water-energy-food nexus is central to Ethiopia’s water policy and water resources development, adding that utilizing water resources to meet national goals in achieving sustainable development is critical. Source: The Ethiopian Herald, November 29/2018

During the historic meeting held in Addis Ababa on April 2022, resulted in adoption of the IGAD BE strategy which, interalia referred Blue Economy as “a driver of inclusive and sustainable economic growth and development in the IGAD region.” It further underlined the need for “promoting the Blue Economy as a key source of inclusive economic growth, job creation and

education, on the evidence based sustainable management of marine resources. On the occasion H. E. Mrs. Dagmawit Moges Minister of Transport and Logistic of FDRE explicated that "the Ethiopian government's commitment on BE is critical to tackle economic and food insecurity challenges and ensuring regional prosperity, It is all together think BLUE!" she noted.

Indeed, over the past few years the emerging concept of the Blue Economy has been embraced even by land locked countries as a mechanism to realize sustainable growth based around water bodies. In short BE approach is a paradigm shift from sectoral thinking that take in to consideration of the inherent interconnections across sectors that share a common space.

Valuing the water resources is a concept that is not new to Ethiopia. Over time the country has drawn considerable benefits from its water resources, with the development of fisheries, tourism, trade, mining and domestic transport to support various social and trade activities. However, the blue resources have not been fully and efficiently managed or valued, and were to a large extent left out or given little priority in planning and funding at the national level. For those reasons, they were mainly exploited through cultural and traditional systems and were under weak policy and legal instruments of their governance. The Blue Economy concept, therefore, seeks to promote economic growth, social inclusion, preservation of culture and improvement of livelihoods while at the same time ensuring environmental sustainability of the water bodies and their surroundings (SIEA 2018 Lot 1 SOGEROM Consortium).

To strategically align the contribution of the blue economy in economic development, it is important to define the blue economy in a manner how Ethiopia should apply blue economy strategy from strategy, policy, economic, sustainability, and innovation perspective. BE refers to a strategic framework, policy, green economy, sustainable inland water economy, and water-based new technology economy. Treating the blue economy from this definition will help Ethiopia strategically align its efforts to make use of the blue economy. With the longest coastline neighboring countries in the mainland of the African continent and the geopolitical position has made Ethiopia's BE the most promising source of future growth. Despite the potential of BE being a very huge opportunity for the country; yet to exploit it sustainably there has to be an alignment of other existing as well as emerging national sector policies and the national development plan. The Government has comprised the emerging concept of BE in which economic activity linked to the water resources and other shared water-based resources requires balanced with the capacity and resilience of ecosystems. Thus; BE puts more emphasis on helping the country generate much more revenue, rebuild a stronger economy for development, create employment opportunities and promote value chains.

In November 2021, representative from the country's BE key sectors came together for the BE National Report for Ethiopia Validation Workshop by IGAD; in Bahir Dar, Ethiopia. The participants of the validation workshop were from the Ministry of Agriculture, Maritime authority, Ministry of Energy and Water Resources, Ministry of Tourism, Ministry of Mine, Ministry of Foreign Affairs and the Directorate of Environment Authority. Moreover the National BE report highlighted, in terms of BE potentiality; national opportunities as well as challenges for ensuring better sustainable management policies for the overall BE goal. Thus; the government has confidence in its national BE key sectors for sustainably achieving positive and admirable results from the BE potential resources. In addition; a National Blue Economy Strategy Development Training was held in Mogadishu on the 29th – 31st July. The training facilitated by IGAD, aimed at build the capacities of national consultants and BE Focal Persons about the alignment of the National Blue Economy Strategies with AU and IGAD Blue Economy Strategies. The training was fruitful and participants not only gained relevant knowledge in develop individual national strategies; but also an experience through exchange of knowledge and expertise with colleagues.

1.3 Objectives of Ethiopian Blue Economy Strategy

The objective of this National BE Strategy is to help the Federal Government of Ethiopia to guide in developing a vibrant and comprehensive BE Strategy and implementation plan. This strategy is aimed at promoting sustainable economic growth, improved livelihoods and environmental stewardship through the sustainable utilization of all water-based resources. In addition; the strategy is regarded as the primary implementation plan which turns policies into effective and practical actions. As such, it is comprising guiding principles, strategic goals, intervention priorities, and logical framework as a foundation for developing the BE related activities.

1.4. Methodological Approach

The preparation of the National Blue Economy Strategy has been the necessity of aligning blue economy sectors' policies and strategies for the utmost BE resources exploitation. In other words; the strategy should link BE sectoral policy, regulations and implementation planning; as well as identifying and harmonization of BE development objectives and priorities. In the process of the preparation of the strategy include opening up space for input by all major BE stakeholders, including fisheries and aquaculture, maritime transport and ports, blue tourism, to name only a few. Based on stakeholder inputs and available documents and data; a thorough review of the strategy by all stakeholder will be conducted to furnish a robust foundation for the strategy.

1.5.National BE Situation Analysis Methodological Approach

1.5.1 BE Sectors

1.5.1.1 Maritime sector

A United Nations report recently revealed that poor maritime connectivity continues to keep smaller and weaker economies from reaching world markets. However, for those few landlocked countries that have defied their geographical limitations and developed a maritime industry, the risk seems to have been worth it. A new report compiled by the United Nations Conference on Trade and Development (UNCTAD) reminded policy-makers that low shipping connectivity makes weaker economies more vulnerable, and the world is experiencing “a growing rift between the best and worst connected countries”.

Despite all the challenges facing those landlocked economies, the United Nations Convention of the Law of the Sea (UNCLOS) of 1982 recognizes the right of “every state, whether coastal or land-locked to sail ships flying its flag on the high seas”. Thus, a number of landlocked countries around the world, including Ethiopia, have chosen not to pass on the economic opportunities that a maritime industry can offer. Whether by training seafarers for navigation on the high seas, manufacturing shipping parts, ship repair,

Ethiopian Maritime Affairs Authority scope the task of the organization on Inland water, Shipping, Seafaring, Ship registration and Ocean resources. Major Sectors of Blue Economy identified are: Maritime transport, Maritime tourism (Cruise ship), Maritime energy, Seabed mining and Marine fishing.

Given this reality, Ethiopia's blue growth has taken a different path in this regard. A number of agencies and institutes have been training up young Ethiopian seafarers to export their skills on ships all around the world. The Ethiopian Maritime Training Institute (EMTI) located at Bahir Dar and Ethiopian shipping and Logistic Service Enterprise's at Debre Zeit (Babogaya Maritime and logistics training institute) are the only institutions currently working in this regard.

Ethiopia owned 11 cargo ships with a total tonnage capacity of 241, 843. Revenue is 3.8 million USD. Currently The Maritime training institutions trained more than 6000 seafarers and are now looking to increase this number to 1000. For example, global manning and crewing support agency EMA Marine has been aiming to attract and train the best talent in the country since its foundation in 2011.

1.5.1.2. Hydroelectric potential

Ethiopia's energy sector, like in many other Sub-Saharan countries, depends highly on biomass despite the immense hydropower resource of the country. According to Halcrow and MCE (2006), in 2000, 73.2 percent of energy came from woody biomass, 15.5 percent from non-woody biomass (cow dung 8.4 percent, crop residue 6.4 percent, and bio-gas 0.4 percent), petroleum fuels 10.3 percent and hydropower 1 percent. These are used in households, agriculture, transport, industry, service and others.

By end of 2005, over 95 percent of the 1 percent of total energy coming from electricity was generated by hydropower. According to Beyene and Abebe (2006), the Interconnected System (ICS), amounts to 769 MW, coming from 8 hydro, 5 diesel-powered and 1 geo-thermal plants, and the Self-Contained System (SCS) amounts to 23 MW coming from 3 small hydro and several small diesel plants, which brings the total electrical energy generation of 791 MW. The gross hydropower potential of the country is estimated at 650 Terra Watt Hour (TWh)/year. Out of this potential, about 160 TWh/year is believed to be technically and economically exploitable. However, the total installed capacity of the ICS and SCS is 791 MW, which is less than 2 percent of the potential.

Hence, given the rapidly growing population in the foreseeable future, these resources will have to be tapped and harvested in order to attain food security, overcome the effects of climate change and variability, maintain sustainable industrial growth and improve the overall standard of living of the people of Ethiopia.

Constraints of Water Resources Development in Ethiopia are numerous. They fall in one of the general categories of legal, political, social, institutional or technical. This is because, unlike the agricultural and health sectors, institutionalized water research in Ethiopia does not exist, as it is the case in most parts of Africa and underdeveloped countries.

5.1.3 Fisheries and Aquaculture

Ethiopia has over 200 fish species 40 are endemic to the country. Empirical models suggest that current total fish production potential is about 94,000 tons per year (Gashaw Tesfaye and Wolff, 2014). The empirical models generally do not take into account the effects of unsuitable management or fishing practices and have been criticized for consequently grossly overstating the Maximum Sustainable Yield (MSY).

Management of fisheries is not uniform, resulting in patchy overall data collection and information. In 2007 total production was 13,253 tons (up from 10,617 tons in 2006), valued at approximately USD 14 Million (FAO, 2011). In 2010, total production was 18,058 tons and capture fisheries make up the entire production in official statistics. Presentation by Fasil (2022) the production in 2006, 2007, and 2010 was 38,370, 50,119 and 56,127 tons and valued 29,460,250, 30,317,276 and 67,280,355 USD respectively. In 2010, export quantity amounted to 849 tons, while imports amounted to 421 tons.

Aquaculture in Ethiopia is at its infantile stage. There are some experimental ponds around some research stations eg. (Sebeta, Bahir Dar, Ziway, Guder) and at the backyard of some selected farmers in different locations of the country. Several scientific experiments had been conducted on cage and pond cultures in the country and are showing promising future in Ethiopia. The development of the sector should, thus, be seriously considered given the available water resources, suitable climate, soil, and inexpensive labor. Recently a national aquaculture development strategy document has been developed with the assistance from FAO, which is a positive move towards development of aquaculture in the country. There is no statistics indicating the contribution of existing aquaculture to the fisheries in the country.

Arba-Minch Crocodile Ranch is located in Gamogofa zone some 500km and 270 km south west of Addis Ababa and Hawassa, respectively, in Gamo-Gofa Zone. Arba-Minch Crocodile Ranch is one of the biggest & the only ranch in Ethiopia. It is situated at the south west shore of Lake Abaya and adjacent to "Nechi-Sar" National Park. The ranch was established in 1984 and it lies on an area of 3 hectare of land.

The farm, since its commencement, has attracted tourists from all over the world and is built on the edge of Lake Abaya in Arba Minch, in Ethiopia's southern Rift Valley, and is home to thousands of the reptiles. Although it was threatened by large floods from the shores of two Rift Valley lakes in the surrounding a decade ago, it has been coping with other problems in order to realize its massive potential in exporting crocodile leather and meat.

5.1.4 Mining from water bodies

Soda ashes and Lime Extraction

Lake Abijatta is an alkaline lake in Ethiopia. It lies in the Main Ethiopian Rift valley south of Addis Ababa, in the Abijatta-Shalla National Park. There is a soda ash operation on the shores of this lake, which produces 20,000 tons of sodium carbonate. Proven reserves at Lake Abijata, as well as the neighboring Shala and Chitu lakes, exceed 460 million tons. The major problem associated with Lake Abijata and Shalla is withdrawal of water for soda ash extraction from Lake Abijata at present but also from Lake Shalla in future. This activity profoundly affected the water balance in Lake Abijata which has resulted in its shrinkage to very low and apprehensive size in recent years.

Salt Extraction

Lake Abbe, is a salt lake, lying on the Ethiopia-Djibouti border. It is one of a chain of six connected lakes, which also includes (from north to south) lakes Gargori, Laitali, Gummare, Bario and Afambo. Lake Abbe is the ultimate destination of the waters of the Awash River. Lake Abbe is known for its limestone chimneys, which reach heights of 50 m (160 ft) and from which steam spews forth. These carbonate chimneys are formed by the mixing of lake water and a deeper geothermal fluid. Calcium carbonate is a chemical compound with the formula CaCO_3 . It is a common substance found in rocks as the minerals calcite and aragonite (most notably as limestone, which is a type of sedimentary rock consisting mainly of calcite) and is the main component of pearls and the shells of marine organisms, snails, and eggs. Calcium carbonate is the active ingredient in agricultural lime and is created when calcium ions in hard water react with carbonate ions to create lime-scale. It is medicinally used as a calcium supplement or as an anti-acid. Lake Karum (also known as Lake Assale) is a salt lake in the Afar Region of Ethiopia. One of two salt lakes in the northern end of the Danakil Depression (the other one being Lake Afrera), it lies at -120 m (-394 ft) relative to sea level.

Lake Afrera (Afdera) is a hypersaline lake in northern Ethiopia. Located in Administrative Zone 2 of the Afar Region, it is one of the lakes of the Danakil Depression. According to its entry in Lakenet, it has a surface area of 100 km² (39 sq mi), although another source states the area is 125 km² (48 sq mi). An unconfirmed report gives its depth as 160 m (525 ft); the lake is fed by underground streams.

Sand Extraction

Almost all over the country, sand is extracted and/or explored on water bodies mainly on rivers. This is because the sand from hillsides moves to these areas together with runoff water, washed by the river water and settles at the bottom. All the river basins have huge potential of sand for extraction and the construction industry is fully dependent on this sand.

The case in the Lake Tana sub basin is very critical. All the rivers, streams and depressions are sources of sand and many people are engaged along the value chain of sand mining. The exceptional is that Lake Tana by itself is the source of sand for the area and it is being transported to Bahir Dar by ferries in addition to dam trucks. The Lake Tana sand source is from the Northern part of the lake around Takusa Woreda (district) specifically at the town of Delghi. The ferry carries 35 m³ of sand at a time and transports sand at least once a week. The selling price varies in season, higher during the rainy season from June to September, as dam trucks cannot access the rivers during the rainy season.

1.5.1.5 The Current Tourism Situation of the Country

Ethiopia's Travel & Tourism economy grew by 48.6% in 2018, the largest of any country in the world, according to the World Travel & Tourism Council's (WTTC) annual review of the economic impact and social importance of the sector released in March. Ethiopia experienced the highest tourism growth in the world, surpassing the global average growth rate of 3.9% and the African average of 5.6%. The Council stated that during the period, the sector supported 2.2 million jobs and contributed \$7.4 billion to Ethiopia's economy, an increase of \$2.2 billion in 2017.

Growth over the years seeing it increasingly becomes an important economic sector in the country. Such economic prominence of the industry is illustrated by its direct contribution to the country's GDP which in 2013 was 4.2%, translating to ETB 35,766.6m.

This is forecast to rise by 4.5% to ETB 37,373.6m in 2014 (WTTC, 2014). Though the overall contribution made by Tourism industry is significant, to disembody the contribution made specifically by water resources is quite difficult. Indeed there are number of water based mega tourism projects in the country currently initiated by the government such as Gorgora, Koyisha and Wonchi projects that are under finalization to promote and diversified tourism supply of Ethiopia. Moreover the government has recently shown strong commitment to develop the tourism sector recognizing its contribution to the national transformation and consequently has taken some practical measures in this regard. Tourism is taken as one of the five priority sectors with clearly defined policy goals.

The ministry developed niche tourism products to diversify the range of products, among them High-end water based tourism products such as lodges, resorts and water based entertainment and sport facilities, such as boating activities. The Ministry also prepared development plans and initiatives to prepare for flagship products and ongoing projects including the Great Ethiopian Renaissance Dam. The marketing strategy developed also emphasized in matching target market segments and tourism products on water related eco-environment.

1.5.2. Status of aquatic ecosystems and environment

Although precipitation is projected to increase in some areas of Eastern Africa as a result of climate change, evapotranspiration will also increase due to a rise in temperatures, thus reducing the benefit of water resource abundance. Prolonged and severe droughts can lead to low water levels in rivers, underground aquifers and reservoirs, impacting on the hydrology, biodiversity and water supply.

Aquatic ecosystem includes rivers, reservoirs and lakes. In Ethiopia, this ecosystem harbors various species of mammals, birds, reptiles, amphibians, fishes and invertebrates. Similarly, numerous species of planktonic and benthic fauna have been reported from different rivers and lakes of the country. Moreover, many important microorganisms such as bacteria, fungi, algae and protozoa exist in this ecosystem. This ecosystem is also serving as a feeding site for a large number of resident and migrant birds; especially Flamingos, Ducks and Pelicans.

Aquatic Ecosystems are highly influenced by various anthropogenic factors such as pollution and over exploitation of fish stocks. Invasive species such as Water hyacinth are becoming threats to Aquatic Ecosystem of the country. Diversion of rivers, channeling and building water distribution facilities, and indirect influences such as the removal of riparian vegetation cover, mining and similar activities have played roles in altering these habitats. Conservation efforts directed to Aquatic Ecosystems of Ethiopia are minimal. Ethiopia has a painful experience regarding the total loss of Lake Haramaya, and the current trend around Lake Abijata shows the lake's likely disappearance in the near future.

Environmental pollution is one of the major challenges in Ethiopia. Several pollution sources that pose threats to environment, and which consequently affect the social and economic activities (agricultural, industrial and other businesses) permeate the Ethiopian development landscape. Both natural and artificial/man made factors are responsible for the pollution of water, air and land in the country.

Major causes of pollution to aquatic and wetland ecosystems in Ethiopia are large and small scale factories such as brewery, textile, chemical, tobacco, thread and garment, and paint factories. Most of these factories do not have proper waste disposal systems and are dumping and/or draining their wastes into nearby aquatic and wetland ecosystems. The other most important large-scale human activities producing dangerous pollutants in Ethiopia include garages, petrol stations, tanneries, slaughter houses, market centres, hospitals, oil and flour mills, metal works and car washing. This results in causing major damages to the biodiversity of the ecosystems through deposition of heavy metals as it is the case in Akaki River, and Abasamuel and Koka reservoirs. Intensive agricultural activities such as commercial flower farms are also contributing significantly for water pollution in Ethiopia.

1.5.3 Blue Economy Governance

The Blue Economy Governance is a cross-cutting area that covers maritime security, trade, shipping as well as regulating fisheries and preventing pollutions. Though the governance itself is not an economic sector unlike the other four BE key sectors, it is just as important in influencing development outcomes. Thus; BE initiatives cannot be carried out unless the country's aquatic environments are kept safe, secure and climate resilient. Accordingly, for the Government of Ethiopia; optimizing human benefits without compromising the health of BE resources is the core meaning of BE Governance. Turton et al, 2007; described the Ecological Governances as the process of informed decision-making that enables trade-offs between competing resource users so as to balance environmental protection with beneficial use in such a way as to mitigate conflict, enhance equity, ensure sustainability and allow accountability.

To ensure BE initiatives and activities are realized, the BE Strategy focuses on how and by whom the aquatic resources will be sustainably developed. Who will responsible in equally distributing the BE benefits and in minimizing the risks as well. Furthermore; the strategy puts first the role of national BE institutions and shared responsibility to improve activities and coordination of the programs. To this end; it highlights the institutional mechanism necessary to ensure BE sectors and agencies work together towards keeping the environment safe and productive enough for current and future exploitations.

1.5.4 National BE Relevant Policies and Legislations

The national policies relevant for the Blue Economy Governance are shown in Table X. These policies shall incorporate, if not yet, the need of BE related resources so that sectoral policies are implemented in coherence with the national blue economy strategies.

1.5.5 International Instruments

International laws are also part of the national governance framework where Ethiopia is a signatory, including:

- » Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES) 1975
- » Convention on the Conservation of Migratory Species of Wild Animals (1983)
- » Regional Convention for the Conservation of the Red Sea and the Gulf of Aden Environment (1985)
- » United Nations Convention on the Law of the Sea (1982)
- » Protocol concerning Protected Areas and Wild Fauna and Flora in the Eastern Africa region (1996)
- » AU Development Goal of 2063
- » 2050 Africa's Integrated Maritime (AIM) Strategy □
- » Africa Maritime Transport Charter
- » sustainable Development Goal-SDG 14
- » AU, BE Policy for Africa
- » AU, BE strategy
- » IGAD, BE strategy

1.5.6 Challenges

The challenges of the blue economy are multifaceted and range from technical, institutional, infrastructural, and human capacity, legal, security, risks, and threats to Prosperity Derived from Aquatic Resources. Though complex, addressing these challenges could open untapped opportunities to raise revenue for Ethiopia and support the nation's economic transformation. The major challenges, which are relevant across all sectors, are outlined below.

Governance

provement has been achieved, responsibilities and authorities are perceived to be unclear. The lack of a recognized single point to manage all BE matters and how it is coordinated within different sectors and cross-cutting issues are in great need to materialize the objective of the BE strategy. According to baseline assessment report, comprehensive BE assessment and a Framework (and investment strategy) that feeds directly into the national development priorities of Ethiopia is essential. The

Table 1: National Policies Relevant for Blue Economy

No.	Sector	National Policies, Strategies and Implementations Plans	Laws and Acts/Standards	Year
1	Ministry of Water and Energy	identified ten climate resilient strategic priorities in four priority sub- sectors (power generation, energy access, irrigation and access to water, sanitation and hygiene);		
2	Ministry of Water and Energy	MoWE introduced eco-hydrology concept and its efforts to institutionalize and the initiation to establish African Eco-Hydrology Center of Excellence within MoWE.		
3	Ministry of Tourism	10 years Sustainable Tourism Development Master Plan		2015-2025
4	Ministry of Tourism	Tourism Destination development, Tourism investment and Tourism Fund establishment & mobilization strategy (under revision)		
5	Ministry of Tourism	Ethiopian Tourism Policy (Under revision)		2009
6	Ministry of Tourism	Ethiopian Tourism Investment Strategy		2022-2026
7	Ministry of Tourism	Ethiopian Tourism Marketing Strategy (Under Revision)		2016-2020
8	Ministry of Tourism	Ethiopian Domestic Tourism Development Strategy		2022-2026
9	Ministry of Tourism	Ethiopian Tourism Recovery Plan		2022-2023
10	Ministry of Mine	Development of 10 years national strategic plan for the mining industry		
11	Ministry of Transport and Logistic	National Logistics Strategy (under implementation)		2018-2028
12	Maritime Authority	Blue Economy Strategy for maritime sector (draft)		2021/2022
13	Ministry of Transport and Logistic	National Transport Policy		
14	Ministry of Agriculture	National Aquaculture Development strategy of Ethiopia		2009
15	Ministry of Agriculture	Fishery and aquaculture master plane is on the verge of preparation.		
16	Ministry of Agriculture		<ul style="list-style-type: none"> » Federal Fisheries Development and Utilization Proclamation » Fish Products Quality Control Regulation suspended for approval » Fish Resource Management Control Directive, » Fishing License Directive are prepared and pending for validation. 	2003
17	Ministry of Agriculture, Ethiopian Quality Standard Authority		<ul style="list-style-type: none"> » fish product quality standards (12) » recommended code of practice (7) and » Guidelines (2). 	

aim is to furnish policy direction for harmonizing sector-based administrations, regulatory reforms and other policy tools and necessary partnerships (domestic and international).

Security

Without security, it is unimaginable to efficiently use the available economic resource. The inability to ensure security could hurt blue economy investments due to low confidence in the return of investment. Insecurity hurts almost all blue economy related sectors with particular emphasis on fishing, tourism, energy and others.

Capacity

There is a lack of skills in understanding and adequately exploiting blue economy resources is the venue to prosperity as without skills, it would be hard to create jobs and promote innovation and research and development. There is a need to improve competence in an internationally acceptable manner so that water transport and port management, law enforcement, application of advanced technology, trade, and innovative business models could be applied.

Lack of Awareness

The use of blue economy resources, especially when it comes to hydropower, blue tourism, minerals and fish is huge. Despite this abundant the country is still not feeding its population and not aware how much this sector can contribute to the national economy.

Poor Infrastructure

Much of the inland water port infrastructures are in poor conditions also the ports Ethiopia is using are poor making import/export untenable, slow, or expensive in comparison to competitors. This also applies to inland water resources, where most infrastructure to use water resources for agriculture is also in poor conditions.

Laws and Regulations

Ethiopia is developing laws and regulations for different sectors that involve blue economy related resources. However, an overarching and inclusive laws and regulations are critical, which covers all blue economy related sectors.

Environmental Risks

The blue economy resources, mainly ecosystems, are susceptible to man-made risks such as climate change, pollution, and the impacts of shore-based industry and polluted run-off. Ethiopia needs to have a very strong and enforceable environmental management plan to mitigate the environmental risk that could potentially arise from the existing and future threats.

Lack of Knowledge of Blue potential

Due to sectoral accounting, the potential of blue economy potential is not adequately known with high confidence. Most of the blue economy resources, are not adequately known, nor are adequate capability exist to determine these resources.

Temporal and Spatial Blue Economy Database

The knowledge of blue economy resources, their spatial distribution, and temporal occurrences are very important to make use of the resources in a sustainable manner. The spatial quantification of resources and coverage is very useful for understanding the potential of ecosystems and how they should co-exist with any development plans as well as planning for their exploitations; spatial planning could also help identify high polluted areas and trends of pollution, planning, security, and safety, and many more. Moreover, the availability of management tools that help decision-makers understand the rate of exploitation through time, enforce environmental and social considerations, and delineate certain areas as environmental conservation zones. It shall also help identify potential areas for ecotourism investments. This type of information shall also help Ethiopia to implement socially and economically equitable benefits to its citizens.

PART 2

THE NATIONAL BE STRATEGY GOALS AND INTERVENTION AREAS

2.1. Introduction

BE sustainable growth requires strategy to ensure food security, create jobs and to safeguard of the aquatic resources safe enough for future utilization. The goals of this strategy therefore; aim putting into practice the broad BE objectives and visions, at the same time addressing the challenges and opportunities. In addition; they are aimed to ensure equity, environmental sustainability and economic viable development. Such priorities are identified based on Ethiopia's challenges, regional and international dynamics, and experiences. In addition; these goals are classified in a manner to address multiple challenges facing the country and make use of them in full potential. The strategic goals and objectives developed based on challenges and opportunities of the country and are articulated in line with IGAD Blue Economy Strategy and the Africa Blue Economy Strategy.

Ethiopia's national commitment towards blue economy has been demonstrated through Political willingness or intention from government expressed at a national level by:

- » Government signed regional and international agreements, conventions and arrangements;
- » Government media releases;
- » Speeches or announcements made by officials endorsing the blue economy.

Further the initiation taken for preparation of national BE report and consultation processes organized by IGAD for the development of National BE strategy document indicates a more mature state of action.

The BE strategy document of Ethiopia validated by the ministerial level of government recently. The outcome was the creation of Department/Unit for the Blue Economy within the Ministry of Transport and Logistic in Ethiopia via inter-ministerial forum agreement held in Bahir Dar, December 18, 2022. The Department/Unit has the mandate to coordinate and lead blue economy initiatives/sectors in order to harness the untapped potential of our water resources for food security, job creation and economic growth. The national BE strategy document of Ethiopia examined different facets of the blue economy in operation and the strategic goals and objectives developed based on challenges and opportunities of the country and are articulated in line with IGAD Blue Economy Strategy and the Africa Blue Economy Strategy.

2.2. Vision and Mission

Considering Ethiopia's vision of achieving middle-income status by 2025, improving the share of BE to the country GDP growth through poverty reduction, Job creation, ensure food security, foreign currency generation and creating regional economic integration through enhancing peace and security:-

Visions

- » Make the contribution of BE to the national GDP of the country economy to 5%;
- » Promote regional economic integration through enhancing peace and security.

Mission

To develop and support effective and robust guidelines to fulfill the aspirations of the country's Blue Economy Industries into a sustainable and economically viable sector

2.3. Guiding Principles

The National BE Strategy and Implementation Plan must be country-owned and based on a process of broad participation and consensus-building that delivers a comprehensive BE analysis sufficient to pave the way for the government and international partner interventions to ensure the desired social and economic development outcomes. Three main principles that underpin the implementation of Blue Economy are: the circular economy; good governance and environmental and social sustainability.

Circular economy:

A circular economy entails businesses that encourages and gives incentives to reusing products, rather than scrapping them and then extracting new resources. In this economic scenario; all forms of waste, such as clothes, scrap metal and obsolete electronics, are returned to the economy or used more efficiently. In other words, such economy keeps materials, products, and services in circulation for as long as possible. The adoption of a circular production and consumption model is linked to Blue Economy. This principle consists in sharing, reusing, repairing, renovating and recycling existing products and materials as long as possible in order to retain their value

Good governance:

Regarding the ocean-based economy; BE governance is key for the achievement of Sustainable Development Goals - SDG 14. Therefore; to improve BE governance there are twelve essential principles of good governance (COE, 2022), that Ethiopia needs to apply such as Fair Representation and Participation; Responsiveness; Effectiveness and Efficiency; Openness and Transparency; Ethical Behavior; Skills and Abilities; Innovation and Openness to Change; LongTerm Orientation; Sound Financial Management; Cultural Diversity and Social Cohesion; and Accountability. Adhering to these principles helps to attract investments that drive blue economy-related investments.

Environmental and social sustainability:

For the sustainability of the BE resources and sectors, Ethiopia should make sure strict environmental policies, laws and regulations in place. With the proper enforcement of such laws impacts of pollution, environmental degradation will be decreased and the social sustainability of BE resources well protected.

Respect for partnership:

The growing involvement of private sector in the economic development of Ethiopia is becoming vital. The government alone can't fulfill the growing need of goods and services to be supplied for the communities. Also the skills required, financial resources, the effectiveness and efficiency also poorly addressed if projects are handled only by the government. Thus harmonized, productive, trustful, regulated and sustainable Partnership between the government and private sector is mandatory for mutual advantage and for the benefit of the country at large.

2.4. Strategic Goals

The main purpose of the strategy is to demonstrate and support enhanced collaboration among BE sectors in more effectively addressing areas of joint concern, with the aim to improve income generation, enhance livelihood and food security, resilience and participation in natural resources management of youth, women and men in all sectors. The strategy aims to improve the uptake and application of integrated governance and management concepts and principles such as sustainability, circular economy, and good governance. In line with key principles in these approaches, a key feature of this strategy development is to operationalize and demonstrate inter-sectoral collaboration and participation in practice; between ministries responsible for BE on the national and local level, and by engaging and partnering with communities, stakeholders and their organizations to achieve proper utilization and exploration of blue resources at the national level. The strategy will be the road map to develop the Blue Economy of the country and will be a tool to mobilize resources to develop the sectors.

Accordingly, the following four strategic goals are identified as a pillar for the national BE strategy:

- » Strategic Goal 1: Establish functional blue economy governance policy and investment framework, regulations and coordination mechanisms
- » Strategic Goal 2: Identify, Develop and Implement Blue Economy Priority Program of Actions at Sectoral level
- » Strategic Goal 3: Create empowerment and inclusive decision making, Environmental Sustainability, and Economic Viability Conditions
- » Strategic Goal 4: Accelerate the Exploitation of Blue Economy Sectors and Industries through Innovation, Research and Development

2.5. Strategic Interventions Areas

2.5.1. Strategic Goal 1: Establish functional blue economy governance policy and investment framework, regulations and coordination mechanisms

This strategic goal is aim to strength Institutions for Policy Environment and Governance to coordinate. This will assist to foster coherent policy practice to enable harmonized regulatory frameworks among all sectors and strengthening their capacity. Moreover, to have the Ethiopian Blue Economy accelerates the Economic Transformation of the country.

This goal will assist mainstreaming of the blue economy in the national policies and strategies to drive economic transformation. Also it will help to develop innovative financing instruments to enable the implementation of BE resources and create a conducive environment to attract private investments and take national initiatives through fiscal reforms.

The following are major interventions under this goal:

Establishment of National Blue Economy Forum

The National Blue Economy Forum will be a first step in obtaining the input of local stakeholders involved in Blue Economy activities, with a view to building an inclusive process for the integration of the blue economy concept into existing policies and strategic frameworks. It will provide a platform for open consultation on the Blue Economy and debate on emerging issues to be addressed. Participants will come from a wide range of public and private organizations and agencies, non-government organisations and Government Ministries. The forum will conduct an annual event and will be coordinated by the Blue Economy Department.

The main objectives of the dialogue will be to: a) Sensitize the various international and national stakeholders on the ongoing and forthcoming work being done in various sectors, and infrastructure development involved in the Blue Economy, b) Obtain their feedback and input on how to further develop these sectors, c) Present opportunities and modalities for investment in the Blue Economy. The expected outcomes will be for all sectors to get a better understanding of existing and emerging opportunities and to contribute to the elaboration and implementation of the Blue Economy concept, and to obtain renewed political support for the implementation of the Blue Economy strategy.

Establishment of the Blue Economy Department /Unit

The establishment of a new Blue Economy Department/Unit within the Ministry of Transport and Logistic with full time staffs (coordinator, senior BE advisor, M&E officer and Program Assistant). Each line Ministries will assign a blue economy focal person. The main role of the unit and the focal person is to provide a high level focal point that will ensure a more effective co-ordination of Blue Economy related initiatives. It should help Ethiopia in promoting the sustainable use and conservation of its vast water resources, through complementing and better coordinating the work being done by other departments and agencies.

Establishments of Inter-ministerial Forum for BE

Blue economy encompasses many institutions engaged in different sectors. Thus, to strengthen coordination among the BE sectors a coordination mechanism is essential in moving forward and making the BE a coherent and collective initiative. To date like other countries in IGAD region; the Ministry of Transport and Logistic, is the Focal Ministry for Blue Economy in Ethiopia. The main role of the Focal Ministry is to provide a high-level focal point aimed to ensure more effective BE coordination for the country at the highest political level.

The Ministry of Transport and Logistics will be a chair of the forum for BE and will coordinate other BE ministries for joint planning and implementation of projects and programs. Additionally, the forum will be responsible for the planning and implementation of the Strategy and also assist on resource mobilization of the BE strategy implementation.

In addition a structure to engage the Regional Governments and developing a BE manual for regional governments to sensitize the subject matter. Moreover to be more gender sensitive, the forum ensure the articulation and implementation of empowerment and inclusive decision making.

Development of Blue Economy Strategy Implementation framework and Investment Plans

The national BE Strategy will serve to guide the coordination of BE at macro level and also to mobilize resource. The next step for this strategy is to develop detailed implementation strategy and develop Investment Plan for some selected sectors of BE. This activity will be done by a consultant and the output will be endorsed by the interministerial forum.

2.5.2. Strategic Goal 2: Identify, Develop and Implement Blue Economy Priority Program of Actions at Sectoral level

2.5.2.1. Maritime Sector

Ethiopia so far obtained economic benefits from BE sector specifically from seafarer employment, marine transport, shipping, inland water transport, however ship registration and port development are to its lowest achievement.

The following are major intervention areas:

2.5.2.1.1. Seafarer Development

To develop nationally uniform and acceptable Seafarers training procedure

In order to produce efficient and capable seafarers to meet the requirement and standards of the international market nationally uniform and acceptable Seafarers training procedure is crucial. As per the "STCW" convention, professionals should train at different levels to meet the industry standard of the sector.

Establish seafarers training and employment governance procedures

The country to get foreign currency especially in the form of remittance formalization and governance of the employment system must be in place. The governance approach needs to be diplomatically efficient and maintain the right and obligation of the workers to the best of the parties. This can have great contribution in avoiding Desertion which is the growing concern of the country currently.

Increase Employability of Seafarers

In order to increase the demand of the workers at the international market the training must be designed in a way to have an impact on the seafarers to have in-depth knowledge, Problem solving, leadership and team work skill, adaptation to multicultural environment, physical fitness, and disciplines are very essential.

Develop and strengthening of seafarers training centers

To achieve the country vision evaluating the capacity of the existing centers and also assessing the demand of the market is essential. Moreover, Identifying areas which are proper for the function are selected to expand the sector. Strengthening the

existing center with various facilities to be more efficient is other area of task.

In addition Ethiopian Maritime Training Institute in collaboration with Bahir Dar University initiated a “Bridge program” to generate efficient and effective seafarers within the shortest possible time. The program recruit university graduates of electrical and mechanical engineers and provide them 6 months intensive seafarers training to be marine engineers and “ETO” at the end of the training. There is a plan to expand this program to be given by other universities in the country.

There is an intention to invite internationally recognized big shipping companies like; Maersk Line, Mediterranean Shipping Company (MSC) and Global Carriers to establish/open their own seafarers training centers and to work in collaboration with Ethiopian government in the sector. To achieve this various incentive packages will be in place for both domestic and international enterprises that show interest in this regard.

Support Institutions involved in the training and employment of seafarers

Support institutions currently working in various related jobs and those to be created in the future. Support package will be prepared in the future. Enrich the effort by working in collaboration with experienced countries like; Norway, Greece, Denmark and England in the areas of “marketing network” and “Manning Agencies”.

Establish Government “Manning Agencies”

Currently seafarers to be employed on foreign ships they need to approach foreign Manning Agencies which have implication on the future effectiveness. To have Government Manning agency in the country is compulsory. Thus developing regulatory frame work and institution to handle this will be established.

Creating Strong Marketing Network

Ethiopian Diplomats working in the countries with high number of ship owners and ship registration offices need to work hard in introducing and selling the ideas. Mechanism to be evaluated from this performance will be in place. In countries with high performance the office of maritime attaché will be assigned. In selected places and seasons globally promotion works will be launched. Ethiopia as a new entrant to the sector, market penetration strategy will be designed.

Promote seafarers satisfaction measures

In order to avoid Desertion and increase affiliation to the profession among the young group various incentive mechanisms will be designed by the government. Creating convenient working environment for the seafarers, easing the visa process for the workers in consultation with other countries diplomats, Promote incentives and award mechanism for those who served long personnel and maritime day will be celebrated.

Developing regulatory framework for licensing Manning Agencies that facilitates Seafarers overseas employment

Manning agencies play critical role in job creation for seafarer’s overseas employment, and they have the potential to connect the Nation to the global market of commercial vessels. Currently the legal frameworks governing those aspects are not compatible to manning agencies that are working to link ship owners with seafarers. New legislations and amendment to existing laws needs to be made to accommodate licensing of such agents to penetrate the global market of seafaring industry.

2.5.2.1.2. Develop water transport system and enhance utilization and services

This strategy encompasses both maritime and inland water transport and strives to address the improvement of both transport systems to achieve the intended goals. In addition from income generating perspective intervention points are identified.

Inland water transport

Countries use inland water transport tremendously. It needs infrastructure investment to be cheap transport option. It also has significant contribution to reduce pollution. Developed country Germany and from developing country Malaysia is exemplary in their utilization of inland water resources for transportation of goods and people. They modify rivers and lakes in a way to be convenient for transportation, even design extra canals to assist the system to be effective. Successful inland water transport requires good environmental protection, sustainably human wellbeing centered, and well integrated with other transport systems. To achieve these following intervention strategies are designed.

Study Inland water transport master plan

To exploit the potential of inland water transport initially important to have enough knowledge about the water bodies functioning this capacity. Additionally evaluating capacity of rivers and lakes and the fluctuation they face during winter and summer time. Cost –benefit analysis is made up on the active functioning period of the rivers for transport. Geographical position of the area, ecosystem assessment and environmental impact assessment will be made. Selecting those rivers with high feasibility for the transport function and re-develop them by supplementing them with man-made canals to make them more effective and efficient for the inland transport throughout the year.

Developing regulatory framework for the governance of Inland Water Safety, Transport and Environmental Protection

In order to expand inland water transport in the Country there needs to be a legislative framework to govern the safety, transport and environmental protection on the usage of the resource sustainably. The Ethiopian Maritime Authority has developed an inland transport safety standard that needs to be observed by Regional governments. However, the Country needs to develop a system in which the Federal government coordinates with the Regional governments in accordance with the provisions of the Constitution to harmonize the safety standards in this regard.

Build water transport infrastructures

Traditional water transports though they contribute hugely in traditional fishing industry and transporting of goods and people in the rural areas, due to capacity and convenience unable to provide the growing service demand currently. Thus from short and long term perspectives, designing a strategy to cope with the emerging challenge is necessary. To do that the following intervention points are considered:

- » Replacing traditional boats with modern and efficient boats;
- » Promote boat building and repair schemes;
- » Construct infrastructures like Merina and ferry terminals;
- » To promote the infrastructure construction, water transport financing program will be established.

Enhance inland water transport safety

- » Develop a standard for Boats (Transport and recreation) construction;
- » Provide training and certification for People working on water transport;

Creating port governance system

To reduce boat suffocation and also to control pollution in terminal areas harbor master will be assigned. Moreover to manage all terminals found in the country in an integrated manner, port/ terminal administration system will be established.

Fix instruments and symbols in area where proper to aid navigation

1. Avail communication instruments;
2. Construction of central control towers;
3. Proper utilization of safety appliances.

To make inland water transport pollution free

- » Delineate the water sector that is proper for water transport;
- » To mitigate pollution due bad fuels from boats and reduce impact on ecosystem and biodiversity, emission standard and alternate fuel utilization will be implemented;
- » Waste generated from the boats and siltation of water bodies will be controlled;
- » Awareness creation for those involved in water transport sector.

Integrating inland water transport with other infrastructure facilities

- » Ensure water transport is well integrated with other transport modalities and economically benefitting the communities;
- » Organize those involved in water transport sector as micro-enterprises;
- » Establish a water transport system benefitting the communities in providing the required quality service.

2.5.2.1.3. Promotion of Marine transport services and other supporting sectors Promotion of Marine transport services for international trade

Maritime transport includes passenger transport, cruise lines and cargo transport. More than 80% of the global cargo transported by maritime transport. Denmark, Switzerland, France, Greece, Germany and England are leading European countries in the sector and contribute significantly to their country income. From Asia, China, Japan, Korea and Singapore are countries with great share from the sector.

Port development is currently one of the BE sectors countries involved in the business to promote trade activities between land and water bodies. Countries playing leading role in port development investment are United Arab Emirates, France and China is to be mentioned. DP World, a company of UAE, reported by Loyds Listing that the 4th in the world by port development investment and its activities in the east Africa region is dominantly known. The report shows that the company earned 5.646billion USD in 2018.

Worldwide Ship related businesses are increasing from time to time. This created opportunities to grow ship building and repair sectors. Ship repair is crucial for the shipping sector to be efficient and effective. China, India and Bangladesh are leading countries in ship repair task which is due to the cheap labor available in the country. This created not only ample opportunity in job creation for the countries but also generated huge money.

With this understanding Ethiopia prepared the following strategies:

- » Using ships from Ethiopia and other countries increasing foreign currency earnings for the country;
- » Promote activities related with marine transport such as port development and ship maintenance.

Connecting rail transport system with marine transport to provide multi-modal transport services for passengers

- » Providing least cost and preferred transport service for passengers to and from neighboring countries and Middle East via Djibouti or other ports;
- » Promote tourism and generating additional income for the country.

2.5.2.1.4. Establishing ship registration procedures in the country.

Ship registration is becoming one of the BE sectors countries involved in providing under their nationality and flagship. 1982, United Nations Convention on the Law of the Sea article 91Decree any commercial ship should have nationality and only belongs to one nationality and indicate the flag of that specific country. Thus, countries experienced various types of ship registry systems: Middle, Open, closed and hybrid registration systems are applied. From this registry service they earn foreign

currency. According to the report from Tanker shipping company in 2018 Panama and Liberia earned 18.4 and 16.3 billion USD respectively from ship registration service. The maritime law working in Ethiopia allows Ethiopian citizens and foreigners to register their ships.

Create institution facilitating ship registration service

- » Create knowledge and skill promoting centers dealing on open registry of ship and produce capable professionals. Maritime Authority will take the mandate to create the institution

Prepare attractive packages for those companies to be involved in ship registry work

Reducing the initial ship registry fee and maintenance fee is the incentives to be given for the clients by the new entrants.

Ship companies expect the following incentives from ship registry organization:

- » Tax reduction;
- » Reduction in registration and service fee;
- » Easy criteria to manage their business;
- » Fast and modern ship registry process;

So, the package will endorse all the above incentives.

Create market system strongly linked with logistic for ship registration

- » Those companies registered their ship under Ethiopian flag get benefit and support from investment commission, ministry of revenue, national bank of Ethiopia, and dry port administration;
- » Ethiopian logistic sector due to FOB policy is not open for private sector. Currently this situation is changing which encourage and attract some shipping companies to be registered. The government will create a system in which those registered ships can provide employment opportunity for Ethiopian seafarers;
- » For those companies participating in the multimodal operation, the country will prepare memorandum of Understanding (MoU) and invite them to register their ships.

2.5.2.2. Blue tourism

It is a strategy of short term and long term plan. Initially in collaboration of the stakeholders distinguish water bodies fitting to the tourism and economic feasibility will be conducted. Development framework integrating both private sector and government will be arranged. Infrastructure to serve modern boats with housing facilities equipped with lavatory services, restaurants, beauty salons, medical service center, reliable internet services etc. will be in place. Both the development of infrastructure and the tourism operation subjected to pollution free environment.

The following are major intervention areas:

- » Develop integrated sustainable tourism development strategies;
- » Develop integrated tourism infrastructure strategies;
- » Develop strategic coastal tourism industry;
- » Special focus on the newly emerging tourism sites initiated by PM Abiy Ahmed such as Koisha, Gorgora and Wonchi even the GERD also need to be considered;
- » Develop marketing and public awareness strategy.

2.5.2.2.1. Preparing inland water tourism development infrastructure master plan

Places potentially selected for inland water tourism deliver surrounding communities benefit through job creation and other services. Provide training for local communities on tourism guide, historical and language study, technical skills etc. Gender issue will be given most priority. Special programs for women will be crafted. To attract international tourists on inland water tourism in Ethiopia promotion works will be facilitated using various national and international Medias. To accomplish this integrated deep and wide master plan on the Ethiopian inland water tourism will be prepared.

2.5.2.2.2. Create Safe and pollution free integrated inland water tourism infrastructure

Safe tourism is the target in this strategy. To achieve this all the necessary facilities and equipment like communication equipment, Towers, emergency facilities for search and rescue, skilled personnel who integrate with national rescue team during disaster will be formed.

2.5.2.2.3. Establish National Tourism Information system

Information center will be established. Information access for tourist will be created regarding the areas and location of the inland water bodies, other tourist attracting sites in the surrounding such as parks, historical places etc. Data base indicating tourist flow and satisfaction level will be in place.

2.5.2.3. Fisheries and Aquaculture

The major goal in the strategy is:

- » Optimize conservation, and sustainable fisheries and aquaculture resources use;
- » Achieving full wealthgenerating potential for fisheries and aquaculture sector to optimally contribute to the blue growth;
- » Ensuring sustainable social, economic, environmental, and equitable outcomes and human rights whilst safeguarding natural capital and blue investment.

The following ideas basically govern this strategy:

- » Identify potential water bodies that are proper for fish production and fish farming in the country;
- » Implement fish farming considering environmental protection, aquatic biodiversity and ecosystem as well as economically and environmentally beneficiary fish species;
- » Awareness creation to fish farmers and fishing communities;
- » To avoid unsustainable fishing and overfishing regulation will be in place;
- » Establish a system that promote utilization of fish resources in a way to enhance food security, processing and marketing of quality and clean products.

2.5.2.3.1. Prepare Fish resource utilization master plan

Sustainable fish resource utilization has an impact on economic benefits of the country. So, the contribution of proper infrastructure and modern technology is tremendous to achieve this. The strategy designed to work on technology transfer and utilization of modern boats with certain facilities.

2.5.2.3.2. Reform institutional mandate for both fish production/farming and fishing

To benefit from fishery resources, Ministry of Agriculture will restructure mandated sub-sectors in a way to re-organize fish production/farming and fishing as separate and independent entity. Those regulating the industry and following the production part will have separate institutional arrangement. Data base for fish production and fishing will be established. Those involved in fishing and fish production get registration and licensed through this Institutional arrangement.

¹ Fishing from high sea and the Exclusive Economic Zone (EEZ) are the potential areas permitted under United Nations Convention on the Law of the Sea- UNCLOS law, giving opportunity for both coastal and non-coastal countries. As part of the global community, Ethiopia has the opportunity to use the closest international water body resources like Indian Ocean and red sea to harvest the fish potential by respecting the necessary rules and regulations set at regional and international level.

² Despite being a landlocked/land linked Country, there are international conventions and multilateral treaties that allows the use of ocean resource (i.e. including the seabed) without discrimination between coastal and non-coastal states. Therefore, being a party to such conventions/treaties will assist the nation to benefit from ocean resources that are categorized as a heritage of mankind. Additionally, implementation strategies and policy has to be developed to for the said conventions and treaties. Depositing instrument of ratification for the United Nations Convention on the Law of the Sea has to be the first step to achieve this strategy; the Convention is already ratified by the House of Peoples Representative.

2.5.2.3.3. Promote fisheries co-management system and Integrated ecosystem management system

There has been a shift in the governance of fisheries to a broader approach that recognizes fishers' participation, local stewardship, and shared decision-making in the management of fisheries.

To achieve this intervention points are:

- » Capacity building and education programs about policies, legislation and regulation, to empower communities;
- » Support pollution control, initiatives related to climate change;
- » Precautionary measures to control invasive alien species, that are threatened the ecosystem;
- » Promote adaptive management of ecosystems in response to a changing environment;
- » Promote conservation of endemic fish species;
- » An integrated catchment management of the water shade areas.

2.5.2.3.4. Establish market structure that promote fish resource marketing in an integrated manner

- » Participate micro and small enterprises in fish resource development;
- » Establish market linkage which is holistic and equity base;
- » Introducing modern technology to facilitate supply of fresh fish products like vehicles with refrigerators.
- » Promote integrated market value chain in the system

2.5.2.3.5. Developing a sustainable aquaculture sector to attract SMEs, create employment and generate income

Aquaculture is a growing sector and it should be treated as a business. Therefore, the following actions need to be taken:

- » Mapping of major aquaculture zones
- » Establishments of private fish seed and feed producing farms
- » Creating enabling environment for public-private partnership.

2.5.2.3.6. To put in place Road map about utilization and development of cross-border fishery resources

- » Establish bilateral integrated fisheries management coordination platform, along with the Baro-Akobo River Basin between Ethiopia and South Sudan;
- » Develop plans towards developing and sustainably utilizing trans-boundary fish resources jointly and peacefully;
- » Creates new market opportunities between the two countries and ensures sustainable conservation of the fisheries resources in the basin;
- » Create Bilateral Fisheries Coordination Platform to unlock the full potential of Lake Turkana in the fishery sectors of Ethiopia and Kenya on Omo Turkana Basin;
- » Capacity building at the fishing community level both technically and engaging them in the decision-making process and management.

2.5.2.3.7. High sea fisheries

Implementation of UNCLOS¹ needs harmonization of national laws with relevant provisions and uniform and consistent application of these provisions. It requires domestic legal, policy, and institutional frameworks, as well as cross-linkages with other sectors. Besides the adoption of this international law to our domestic law, the following activities will be performed:

- » Share experiences from countries who developed laws and regulation to use these ocean fish resources;
- » Develop project to explore this resource;
- » Initiate diplomatic preparation to deal with regional integration on the matter and complete collaborative agreement;
- » To look people who have experience and skill on the issue.

2.5.2.4. Minerals

The target is to meet the growing demand for mineral resources for economic prosperity.

The following are major intervention areas:

- » Prepare master plan to explore these resources;
- » Create conducive regulatory frameworks to run environmentally friendly mining;
- » Strengthen capacity building and technology transfer;
- » Explore deep water mining production;
- » Develop project to explore this resource;
- » Accepting and Ratifying International Conventions that facilitates/coordinate nations on the use of Ocean resources;²
- » Share experiences from countries who developed laws and regulation to use these sea bed resources;

2.5.2.5. Hydroelectric power

The strategy will assist to unlock sustainable blue energy potential and create a conducive regulatory environment for the development and utilization of sustainable blue energy.

The following are major intervention areas:

Technical Aspects

- » Prepare inventories of hydropower potential of the country, and identify the site specific conditions that should be put into place to exploit this potential. Take measures to create those conditions;
- » Implement appropriate watershed management measures to ensure long life of hydro dams by minimizing siltation of water ways and reservoirs. Consider terracing and reforestation of reservoir boundary belt. Involve local populations to sustain the impacts of watershed management measures;
- » Establish hydrological, topographical (surveying and mapping), socio-economic, and environmental database for HEP potential sites to facilitate subsequent feasibility studies and analysis;

Financial and Economic Aspects

- » Generate financial resources for future investments in the hydropower development by promoting conditions for the development of a diversified financial sector;
- » Exporting the locally produced electricity to neighboring markets.

Capacity Building Aspects

- » Development of sustainable blue energy master plan;
- » Develop policy frame work for enhancement of blue energy;
- » Create awareness on the positive contribution of Blue energy to combat climate change;
- » Licensing of operators to undertake study and design of small and medium scale hydropower development Projects;
- » Strengthen technical capacities of institutions in planning and development of HEP projects;
- » Reform the power sector to attract private investments in marine energy;
- » Create conducive economic conditions and enabling environment to encourage private sector participation in hydropower development projects, ranging from their participation in carrying out technical studies and designs to local manufacturing of spare parts;
- » Support and strengthen manufacturing capacities of private sector in hydro-mechanical equipment and spare parts to realize technological self-reliance;
- » Promote research and development works in the sector.
- » Promote Blue Diplomacy (BD) with neighboring countries.

2.5.3. Strategic Goal 3: Create Social Equity, Environmental Sustainability, and Economic Viability Conditions

Given the impacts of climate change, the water resource represents both an asset as well as a liability if the appropriate adaptation policies are not implemented in a timely manner. Moreover, many Blue Economy industries are subject to scrutiny in terms of environmental externalities. There are strong synergies between development strategies, climate adaptation/mitigation programmes, concepts of green and circular economy, and the Blue Economy, which would benefit Ethiopia. The strategy is mainstreaming climate adaptation strategies, green practices and adopting the concept of the circular economy in both established and emerging Blue Economy sectors and industries

The strategy will ensure environmentally sustainable and climate resilient economies and empowered communities. Women participation in this regard plays significant differentiated roles in the many blue-based activities. However, they are constrained by access to resources, productive processes and outcomes, training, information, education, patriarchy as well as social norms and values. The strategy emphasizes to give a particular attention to equality and empowerment of women, and to address gaps and weaknesses in the existing and emerging Blue Economy sectors to realize inclusive growth, sustainability, and prosperity.

Develop systems that encourage Public Private Partnership (PPP) and private investments/ participation in maritime infrastructure development as well as related sectorial businesses, which can contribute to job creation and wealth formation.

The following are major intervention areas:

- » -Develop strategies for resilient infrastructure;
- » -Develop integrated sustainable environmental management strategies;
- » Develop capacity for climate resilient blue economy development;
- » Ensure sustainable ecosystem exploitation;
- » Enhance local communities' livelihoods;
- » Develop a risk management framework;
- » Develop mechanism for the exploitation of blue carbon and other ecosystem services;
- » Mapping of the role of women in Blue Economy;
- » Empower women to involve and be leading in Blue Businesses;
- » Providing finance for women to develop their Blue Business;
- » Organize youth group and support their engagement in Blue Tourism;
- » Encourages private sector's participation and investment.

2.5.4. Strategic Goal 4: Accelerate the Exploitation of Blue Economy Sectors and Industries through Innovation, Research and Development

2.5.4.1. Capacity building and outreach

Without adequate capacity at all levels, BE potential could not be realized. Thus, relevant capacity building shall be an integral part of all BE sectors. Some of the capacity building related actions could include the following:

- » Human Resource Development Policy for BE sectors; BE sectors can only be developed through construction of strong human resource development policy;
- » Develop training programs on blue economy governance and on a specialized BE sector to realize the potentiality adequately and sustainably. This kind of capacity building shall focus on government related BE activities. Trained/skilled human resource with technical knowledge in water transport, fishery, hospitality sectors, and regulatory sectors play a key role in achieving this strategy;
- » Develop training programs and undertake training for policy makers local community leaders and public;
- » Develop training programs for private sector on how to engage on BE related activities, promote innovation and entrepreneurship;

- » Develop training programs focuses on women and youth to promote equity and social inclusiveness;
- » Integrate BE in educational institutions (universities, colleges, research centers) in collaboration with Center of Excellences on BE.

2.5.4.2. Establishments of Blue Economy Center of Excellence

Human Resource Development: A natural follow-up is to prepare a productive labour force with the appropriate skills and competencies for the Blue Economy. Skill gap is recognised as a major bottleneck to many development programmes. Given the sustainable facets of the Blue Economy sectors, many jobs created therein are essentially ‘sustainable’ or ‘green’ defined as the skills required to adapt services, products and processes to climate change and the associated environmental requirements and regulations. It is therefore crucial that a Blue Economy development is accompanied by a comprehensive strategy to synchronise and align training and skills development initiatives across education and training institutions.

Bahir Dar University is proposed to be National Center of Excellence for BE because it has all the necessary capacities in all sectors of BE and located in the largest freshwater Lake Tana and the source of the Longest River in the World, The Nile.

The Center of excellence will have a coordination unit under the President office with full time staffs that coordinate the Blue Economy research and capacity building at national level. There unit will have Director, two senior experts in Blue Economy related fields, M&E officer and Program Assistant. The Unit will be reporting for the National BE Directorate and the President of Bahir Dar University.

The Center will be endorsed by the Interministerial forum and will develop its strategic plan on the coordination of research and capacity building.

2.5.4.3. Creation of Financial Innovation Mechanisms for Blue Economy

Development of the blue economy will require investments in a wide range of priority and symbiotic areas including infrastructure, conservation, research and development, institutional and human capacity development, as well as information-sharing and knowledge-building. Given the level of investment that will be needed in the blue economy space, and the binding fiscal constraints and debt dynamics, Ethiopia must find new and innovative ways to finance investments in the sector. There is also need for optimal use of available resources. There are opportunities to blend domestic finance with official concessional finance and other international resources for the blue economy. Opportunities are also emerging for increased public resources as well as private sector finance and investment for blue economy initiatives. These however require new approaches to leverage the existing pools of development finance. It also implies the development and piloting of new instruments in order to extract maximum value from all funding sources. Ethiopia needs to take advantage of new sources of finance such as those for South-South Cooperation, international climate funds and impact investors. Moreover, many new instruments have come on to the market to support of blue economy development: from blended finance arrangements to green bonds, social and development impact bonds, debt-for-nature swaps, and state contingent debt instruments.

Private sector investors remain cautious, due to information asymmetries and risk perception, and how upfront risk are absorbed. Because many blue economy interventions carry higher upfront costs and returns that will not immediately accrue to investors, there is real need for concessional public finance from the international community and multilateral development banks to underwrite these costs.

Innovative financial resource mobilization strategy will be developed by a consultant/Secretariate and endorsed by council of ministers for implementation.

PART 3

IMPLEMENTATION MECHANISMS

3.1. Implementation Framework

The Blue Economy has the potential to contribute to socioeconomic development as well as to SDGs for Ethiopia. The Blue Economy pathway is expected to position Ethiopia on an inclusive and sustainable growth path for the next decades. The pathway can address major socio-economic issues (poverty reduction and income inequality, women empowerment and mismatch unemployment, among others) as well as environmental and ecosystem health issues. It also offers opportunities to entrepreneurs operating in informal sector. The Blue Economy could be a vehicle to boost trade in the medium to long term at national and regional level.

The needs to mobilize its resources, prioritize its areas of action for each blue economy sector, determine short, medium and long-term program of action, and develop monitoring and evaluation for the performance evaluation of its plans. The implementation plan also needs to be aligned with sector specific implementations plans. In addition; it shall also reflect the African Blue Economy Implementation Plan and the IGAD BE Strategy and Implementation Plan (2021-2025) which outlines detailed implementation plan for the project activities identified.

Detail implementation plan for the strategy will be worked out after the endorsement of the National Blue Economy Strategy. The implementation of the Strategy will be the responsibility of the national Blue Economy Division under the Ministry of Transport and Logistics and National Blue Economy Forum. The first strategic goal of the strategy is mainly on the governance and the coordination to implement the strategy.

The implementation plan shall adhere to the BE governance principles and address the identified challenges. Most importantly, they should have a measurable timeline and expected benefits in advancing equity, sustainability, and economic development.

3.2. Monitoring and Evaluation

Accountability and tracking of the performance of the implementation of the BE strategy, and the BE implementation plan is critical to identify lessons learned and adjust accordingly. Monitoring, Evaluation, and Reporting (MER) shall be periodically performed to ensure accountability and track progress made in achieving the overall objective of the strategy. Specifically, the program of actions needs to be monitored, evaluated, and reported. While the responsibility of the MER is the responsibility of the sector specific ministries, their performance shall be evaluated by the National Blue Economy Coordination Platform (NBEC).

ANNEX

Annex 1: Table Summary of strategy goals and intervention areas

No	Goals	BE Themes	Intervention areas	Implementing Lead Institution
1	Goal 1	Governance and BE Coordination		
			<ul style="list-style-type: none"> » Establishment of BE Community; » Establishment of BE Department/Directorate; » Establish Council of Ministers and Secretariate; » Development of implementation framework and investment plan 	Ministry of Transport and Logistics
2	Goal 2.	Sect oral Intervention areas		
		Maritime	<ul style="list-style-type: none"> » Seafarer Development » Develop nationally uniform and acceptable Seafarers training procedure; » Establish seafarers training and employment governance procedures; » Increase Employability of seafarers; » Develop and strengthening of seafarers training centers; » Support Institutions involved in the training and employment of Seafarers; » Establish Government "Manning Agencies"; » Creating Strong Marketing Network; » Promote seafarers satisfaction measures. » Developing regulatory framework for licensing Manning Agencies that facilitates Seafarers overseas employment. 	Ministry of Transport and Logistics/ Maritime Authority
		Inland Water Transport	<ul style="list-style-type: none"> » Study Inland water transport master plan; » Developing regulatory framework for the governance of Inland Water Safety, Transport and Environmental Protection; » Build water transport infrastructures; » Enhance inland water transport safety; » Creating port governance system; » Fix instruments and symbols in area where proper to aid navigation; » To make inland water transport pollution free; » Integrating inland water transport with other infrastructure facilities. 	Maritime Authority and Ministry of Tourism
		Marine Transport Services	<ul style="list-style-type: none"> » Promotion of Marine transport services for international trade; » Connecting rail transport system with marine transport to provide multi-modal transport services for passengers 	Maritime Authority

No	Goals	BE Themes	Intervention areas	Implementing Lead Institution
		Ship Registration	<ul style="list-style-type: none"> » Establishing ship registration procedures in the country; » Create institution facilitating ship registration service; » Prepare attractive packages for those companies to be involved in ship registry work; » Create market system strongly linked with logistic for ship registration; 	Maritime Authority
		Blue tourism	<ul style="list-style-type: none"> » Preparing inland water tourism development infrastructure master plan; » Create Safe and pollution free integrated inland water tourism infrastructure; » Establish National Tourism Information system. 	Ministry of Tourism
		Fisheries and aquaculture	<ul style="list-style-type: none"> » Prepare Fish resource utilization master plan; » Reform institutional mandate for both fish production/ farming and fishing; » Promote fisheries co-management system and Integrated ecosystem management system; » Establish market structure that promote fish resource marketing in an integrated manner; » Developing a sustainable aquaculture sector to attract SMEs, create employment and generate income; » To put in place Road map about utilization and development of cross-border fishery resources; » Promote High sea fisheries 	Ministry of Agriculture
		Minerals	<ul style="list-style-type: none"> » Prepare master plan to explore these resources; » Create conducive regulatory frameworks to run environmentally friendly mining; » Strengthen capacity building and technology transfer; » Share experiences from countries who developed laws and regulation to use these sea bed resources; » Explore deep water mining production; » Develop project to explore this resource. » Accepting and Ratifying International Conventions that facilitates/ coordinate nations on the use of Ocean resources. 	Ministry of Mining

No	Goals	BE Themes	Intervention areas	Implementing Lead Institution
		Hydroelectric power	<ul style="list-style-type: none"> » Prepare inventories of hydropower potential of the country, and identify the site specific conditions that should be put into place to exploit this potential. Take measures to create those conditions; » Implement appropriate watershed management measures to ensure long life of hydro dams by minimizing siltation and reduce water volume fluctuation. Consider terracing and reforestation of reservoir boundary belt. Involve local populations to sustain the impacts of watershed management measures; » Establish hydrological, topographical (surveying and mapping), socio-economic, and environmental database for HEP potential sites to facilitate subsequent feasibility studies and analysis; » Generate financial resources for future investments in the hydropower development by promoting conditions for the development of a diversified financial sector; » Negotiate with the neighboring countries possibilities and arrangements for exporting locally produced electricity; » Development of sustainable blue energy master plan; » Develop policy frame work for enhancement of blue energy; » Create awareness on the positive contribution of Blue energy to combat climate change; » Licensing of operators to undertake study and design of small and medium scale hydropower development Projects; » Strengthen technical capacities of institutions in planning and development of HEP projects; » Reform the power sector to attract private investments in marine energy; » Create conducive economic conditions and enabling environment to encourage private sector participation in hydropower development projects, ranging from their participation in carrying out technical studies and designs to local manufacturing of spare parts; » Promote research and development works in the sector. 	MoWE, and Elpa

No	Goals	BE Themes	Intervention areas	Implementing Lead Institution
3	Goal 3	Equity, Sustainability and Viability	<ul style="list-style-type: none"> » Develop strategies for resilient infrastructure » Develop integrated sustainable environmental management strategies » Develop capacity for climate resilient blue economy development » Ensure sustainable ecosystem exploitation » Enhance local communities' livelihoods » Develop a risk management framework » Develop mechanism for the exploitation of blue carbon and other ecosystem services » Mapping of the role of women in Blue Economy » Providing finance for women to develop their Blue Business » Organize youth group and support their engagement in Blue Tourism; » A strategy that encourages private sector's participation and investment 	Cross sectoral Institutions
4	Goal 4	Innovation research and development		
			<ul style="list-style-type: none"> » Capacity building and outreach; » Establishments of Blue Economy Center of Excellence; » Creation of Financial Innovation Mechanisms for Blue Economy. 	Sectoral ministries and higher learning Institutions (Bahir Dar University)

Annex 2. The following documents reviewed in developing the national BE strategies

1. AU Blue Economy Strategy
2. IGAD Regional Blue Economy Strategy
3. Ethiopia Baseline Reports
4. National Plans and Strategies on BE Sectors
5. COMESA BE Strategy
6. UNECA BE Documents
7. SDGs
8. Lome Convention
9. IGAD Strategies related to BE sectors
10. National BE Strategies from other countries
11. Other relevant documents

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