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**Blue Economy in North Africa:
Sectorial Analysis for Maritime Transport and Tourism**

Blue Economy in North Africa:

Sectorial Analysis for Maritime Transport and Tourism

- *The Blue Economy (BE): is an emerging concept that integrates the economic exploitation of water resources with an advocated strategy to protect their health.*
- *The African continent and North Africa (NA) sub-region are enriched with aquatic natural resources which multiply the BE's potential towards stimulating growth and development.*
- *The UN 2030 Agenda for Sustainable Development and African Union-Agenda 2063 "The Africa We Want" form the guiding principles for the development of sustainable BE policies in Africa.*
- *Across the NA sub- region, BE is partially conceived and understood, while in application the concept is far from being developed.*
- *Maritime Transport and Tourism sectors hold remarkable potential in driving blue sustainable growth in the NA sub- region. This is stimulated from the sub-region's strategic location and the remarkable economic contribution of both sectors to the national and regional economies.*
- *Developing a BE strategy is essential to ensure maximization of ocean and water resources benefits in alignment with the BE principles. endowed in the SDGs.*

I. Setting the Scene

A. Background

The Blue Economy (BE) has been an increasingly invoked concept that integrates the economic exploitation of water resources i.e. oceans, seas, rivers, lakes and other water bodies with an advocated strategy to protect their health. More than 80% of mother earth is covered by water bodies, which are not only considered amongst the most important life resource. Water sources are entitled for half the global production of oxygen as well as the largest carbon sink that absorbs nearly quarter of the carbon dioxide emitted. This reduces global warming where 90% of the additional heat realized due to greenhouse effect is plunged.

Economically, oceans¹ are considered a remarkable source for both wealth creation and jobs provision (van der Nest 2017). For instance, 80% of global trade take place via maritime transport, while 32% of hydrocarbons are extracted from the oceans. Additionally, almost 200 countries and overseas territories benefit from touristic activities that are driven by the oceans (Patil et al. 2016). Within the African continent, 84% of African nations are coastal states, while in the NA sub-region, none of the member states are landlocked. In terms of African trade, 90% of imports and exports take place via the sea, which is a 10% higher proximity than the world. Both, the continent and the NA sub-region are enriched with various economic activities taking place along its coasts, all that multiply the importance of the water bodies and the importance of adhering to BE principles.

The BE has recently emerged after the UN's conference for Sustainable Development (Rio+20) in 2012. The conference's discussions oscillated around two thematic areas, the refinement of the Institutional Framework for Sustainable Development as well as the development of "green economy" a concept that was founded in 1989 (Smith-Godfrey 2016). The emergence of the BE upon Rio+20 attempted to marry the notion of ocean-based development with environmental stewardship and protection. It aimed to extend the green economy principles towards application on marine and ocean

economies as the green economy was contested by costal nations in terms of applicability and relevance.

B. Definition & Components

The BE, and sustainable ocean economy are synonyms where they both account for the environmental risks, ecological damages that could be mitigated or reduced from economic activities realized in the ocean Economy (Pauli and Corbis 2015). Thus, the core difference between them and the ocean economy is the attribute of sustainability upon any economic activity conducted that does not only minimize any harm introduced to the ocean but also focuses on restoring the ocean's health. Therefore, the BE has been defined as the "sustainable ocean economy that emerges when economic activity is in balance with the long-term capacity of ocean ecosystems to support this activity and remain resilient and healthy" (Pauli and Corbis 2015).

Components: The BE's umbrella incorporates range of the productive sectors, among the main widespread across the African continent are fisheries, aquaculture, tourism, transport, shipbuilding, energy, bioprospecting, and underwater mining and related activities (UNECA 2016). Through the BE lens, ocean-based activities operate in clusters which are looked at as an economic system or an economy rather than fragmented collection of individual sectors (OECD 2016). The BE ecosystem also accounts for several services whose markets seize up to exist such as carbon sequestration, coastal protection, waste disposal as well as biodiversity. It moves beyond with an attempt to qualify its products and services on the basis of ensuring social, economic benefits for current and future generations (UNDP 2018).

¹ According to (Park 2014) "ocean, marine and maritime" are synonyms which have been used interchangeably across different countries.

C. The BE's Economic Value

The BE is founded on incorporating ocean values and services into economic decision-making process. Thus, breaking the mold of “brown developmental model” that relied on free resource extraction and waste disposal while having the environmental costs externalized from economic calculations(UNCSD 2012). It attempts to create a glossary for all ocean-based industries and economic activities within an ecosystem approach. The BE considers the economic benefit of the industry as well as its potential effects, to generate blue growth.

Estimates for the **contribution** of the ocean economy to the global world economy are calculated, however due to the lack of well-established marine database globally, a wide range of estimates exist. According to the European Union (European Union 2017), the ocean output is \$1.3 trillion and forecasted to double by 2030. Meanwhile, the economic value of ocean goods and services by the world ocean council were estimated \$6 to 21 trillion (Patil et al. 2016).

If the ocean is a country, it would be the seventh largest economy worldwide (European Union, 2017).

Blue Growth
A concept introduced on same principles of the “green growth”. It aims to realize economic growth for ocean activities in terms of sustainable and environmental terms. (Pauli and Corbis 2015).

D. Agenda 2030: International Guiding Principles

Living with the Ocean and from the Ocean in a Sustainable relationship: formulates the core of the BE. In 2015, the UN’s approval of Agenda 2030 encompassing 17 Sustainable Development Goals (SDGs) with a standalone goal SDG 14 “life under water” presents an acknowledgement and a declaration to the importance of incorporating the ocean’s health among the pressing sustainability challenges. Initial discussions around the BE were always associated with SDG 14 however, UNECA has developed study demonstrating that the BE is interlinked with all SDGs. This is because aquatic and marine resources play a remarkable role in ending poverty via supporting an array of economic sectors that provide livelihoods and employment opportunities. In fact, the BE principles are highly integrated with the 17 SDGs through the UN Agenda 2030(UNECA 2016).

“It can be expressed that the Agenda 2030 for Sustainable Development forms the corner stone for the development of sustainable BE policies, in fact it’s the guiding manifesto”

E. Africa’s Strategic Direction for BE

The BE has the potential to become Africa’s “engine” for development. It aspires to trigger Africa’s structural transformation, promote integrated development and improved regional cooperation as well as equitable distribution of wealth. In 2014, at the 22nd Ordinary Session of the Assembly of Heads of State and Governments of the African Union, Seychelle’s Deputy President Danny Faure stated, “The Blue Economy is Africa’s Future”. Meanwhile, the 2050 Africa’s Integrated Maritime Strategy cited the BE as the “New Frontier of African Renaissance”(AUC and African Union Commission 2012)

Agenda 2063 has stated the BE among the priority areas. Accordingly, the BE has been unanimously declared as a major contributor to continental transformation and growth(African Union 2015). It has been listed as a cardinal component at Agenda 2063’s former aspiration “prosperous Africa”.

The BE’s in Africa is guided by both UN Agenda 2030 and African Union Agenda 2063 “The Africa We Want” aspirations which establish the guiding premises for national and regional policy formulation.

F. State of Awareness of BE in North Africa

The BE literature is at the stage of infancy; however, it is growing; nonetheless with respect to North Africa (NA)² literature on the BE is nonexistent. NA ocean economy studies were tackled on a sectorial basis for instance; tourism, energy...etc. or for a selected country or a panel data-set. This has limited a comprehensive picture for all the challenges and opportunities where room for assessing the concurrent status of the BE with the NA sub-regional outlook. The current research aims to fill a gap in literature with respect to the NA sub-region particularly studying two sectors: tourism and maritime transport .

The BE in North Africa is NOVEL!
Across the NA sub-region, The BE is partially conceived and understood, while in application of the concept is far from being developed. Although the NA region has a wide range of ocean-based industries yet there is no published data on either the economic or social values nor on the potential of oceans. This has significantly hindered measuring the BE’s contribution to both national and sub-regional economies.

² North Africa (NA) is the collective term for grouping seven-member States that include Algeria, Egypt, Libya, Mauritania, Morocco, Sudan and Tunisia. covered by Sub-Regional Office for North Africa (UNECA- SRO- NA) .

G. Some of NA’s BE Resources

The NA sub-region is enriched with BE resources that endure ocean-based activities on its shore along its coastline or within its Exclusive Economic Zone (EEZ).

Coastline Length: None of NA member States are landlocked, all have a coastline. The economic importance of the coastline is multiplied by its length and activities taking place along it thus stimulating economic growth. Algeria, Tunisia, Libya coastal lines are extended solely on the Mediterranean Sea. Egypt’s and Sudan’s west borders are lined with the Red Sea. The Mediterranean Sea also spans Egypt’s and Morocco’s North coast. Morocco’s west coast is lined with Atlantic Ocean making Morocco the longest coastline in NA followed by Egypt. The extended NA coastal length stress the important role of the BE and the great potential in generating blue growth by applying its principles.

Human Resources: Coastal areas have the tendency to attract large proportion of the population due to their resource abundancy particularly food, and other subsistence resources, accessibility to marine trade and transport, recreational activities and connectivity between sea and land. On a global level, coastal population represent 40% of the global population while their rates of growth and urbanization are higher compared to hinterland due to internal labour migration stimulated from the economic activity (UNECA et al. 2017). The NA coastal population is estimated at a total of 79 million (Ocean Health Index, 2017).

The NA coastline length is 25%, 11.6 km of the total African 30.5km where none of NA member states is landlocked.

NA’s estimated coastal population is 33% of its total population. It deviates by 7% from the global average and 22% from the Mediterranean average which are 40% and 55% successively.

Exclusive Economic Zone (EEZ): Coastal nation assumes jurisdiction over the exploration and exploitation of marine resources in its adjacent section of the continental shelf a Third United Nations Conference on the Law of Sea (UNCLOS) in 1982. The EEZ takes to a band extending from the coast, or in the federal system from the seaward boundaries of the constituent states (3-12 nautical miles) up to 200 miles from the shore (United Nations, 1997). It plays a remarkable role in ocean governance, marine spatial planning and ocean -based industries.

The NA sea area shares less than 1% of total world’s ocean area, 13% of the continental EEZ (13 million km2).

Blue Growth in North Africa

Since Rio+20 the blue economy has gained momentum across the globe marking the need to stimulate "blue growth" particularly for island nations and developing countries with significant coastlines and maritime areas. The BE economy seeks to use sustainably untapped marine resources and seaways within the country's EEZ toward economic diversification, trade specialization and connectivity (UNCTAD, All News, 2014).

*The NA region is rich in its coastal resources and BE industries with a remarkable potential to capitalize on its resources towards economic growth. Among the main sectors are Maritime transport and Tourism given their strategic importance and economic significance in the NA region. Additionally, both sectors have been defined in literature under one umbrella notably **Commerce and trade around the ocean** where transport and trade as well as tourism and recreation are its two sub-segments. This is because both sectors are interlinked. Also, they are reported in national accounts under the services category.*

Table 1: Coastal Population in NA 2015

	Coastal Population (millions)	Total Population (millions)	%of Coastal Population
Algeria	19.8	41.3	48%
Egypt	25.2	97.6	26%
Libya	3.1	6.4	49%
Mauritania	1.5	4.4	35%
Morocco	18.8	35.7	53%
Sudan	1.1	40.5	3%
Tunisia	9.2	11.5	80%
Total NA	78.73	237.5	33%
Source (OHI, 2017)			

II. Maritime Transport in North Africa

A. Strategic Importance of NA Maritime

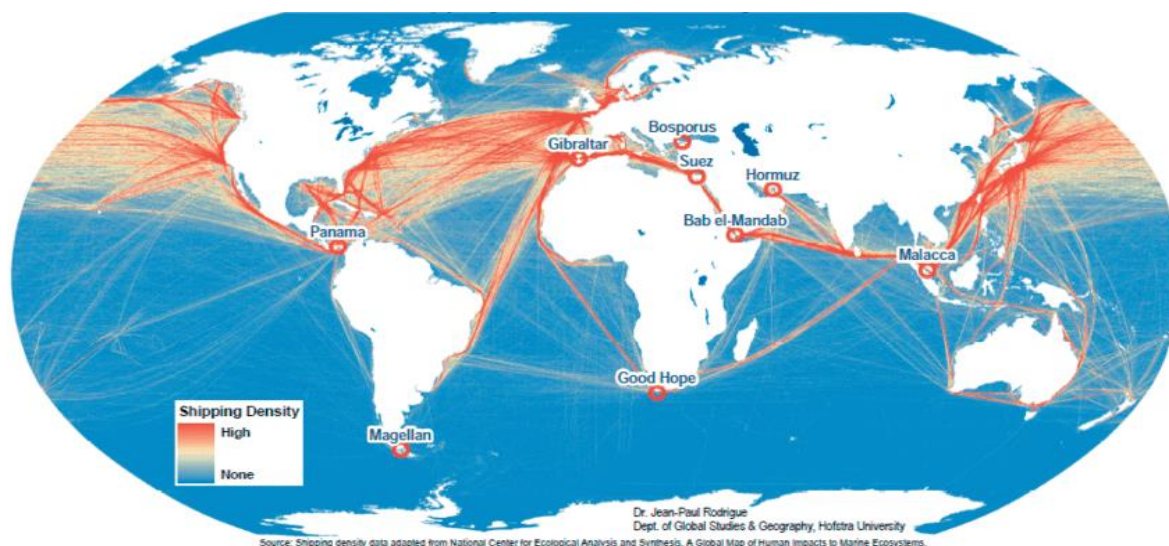
North Africa is boarded by the Mediterranean Sea, which is an inland sea surrounded by Asia, Europe and Africa. In the west, the sea is connected with the Atlantic Ocean via the Strait of Gibraltar (Morocco) while in the east, it is linked to the Red Sea and the Indian Ocean by the Suez Canal (Egypt), and the Black sea by the Dardanelles and the sea of Marmara” which increases the importance and strategic position of the sub-region (Kizielewicz, 2013).

Suez Canal – Strait of Gibraltar Route:

The three main chokepoints that shape the strategic importance of the NA sub-region are: Strait of Bab-El Mandeb, the Suez Canal as well as the Strait of Gibraltar. Through the Suez Canal – Strait Gibraltar route the two-world’s sides east and west were connected through a route that halved, the distance and transport costs compared to the Cape Town Route increasing the strategic importance of NA.

Despite the availability of alternative routes which is not the case for all destinations, longer transit periods shall be realized, traffic shall be concentrated and the security aspect of exposition of oil tankers to maritime piracy might not be mitigated(EIA Beta 2017). Today, more than 8% of the global sea borne trade passes through the Suez Canal. This has induced a ripple effect on the countries bordering both seas via increasing the importance of the maritime transit industry for these countries. Indeed, this has presented an economic opportunity for growth and development, jobs and employment.

Figure 1: Global Maritime Routes



Source: (UNCTAD 2014)

B. Trade and Maritime Transport

Trade and development: Trade is a key factor in economic development. Through the prudent usage of trade, not only the trading partners benefit but all the value chain eco-system benefit which maximizes nations wealth. The sector’s strategic importance has been stressed in the 2030’s Agenda for Sustainable Development as well as in the Addis Ababa’s

Action Agenda. In fact, “trade has been recognized as the engine for inclusive sustainable development and growth”! (UNCTAD 2016). Thus, by inference “maritime transport formulates the motors for its actualization”.

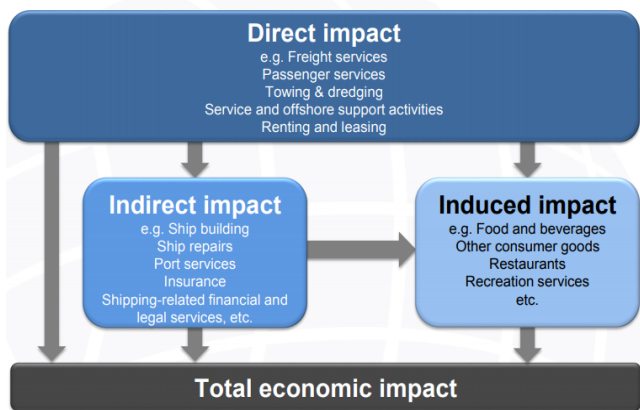
NA’s member states have signed several trade agreements to maximize their international trade, and its yields. However, on a sub-regional level, North Africa’s regional integration process is limited and falls short of the ambitions expressed through the different treaties and agreements. In fact, it can also be considered relatively delayed, compared with the developments in the rest of the

continent. On a continental level, 2018 witnessed the signature of the African Continental Free Trade Area Agreement (AfCFTA) by 44 African nations that aim to cut 90% of tariffs on goods to increase the intra-African trade. This is expected to stimulate the intra-trade among the African nations that composes 15% of the total continental trade. The NA region holds a comparative advantage due to its relatively developed economies that can stimulate trade in the region, Thus, through strengthening its exports, intra-maritime transport services shall also be encouraged being fundamental for the trade facilitation.

D. Economic Contribution of Maritime Transport Services

Maritime Transport economic impact can be measured through vast indicators. Due to the lack of well-established maritime database we will rely on our analysis on selective indicators for the sea transport services that is a sub-category of transport services exported.

Figure 2: Economic Impact of Maritime & Shipping Industries



Source: (Goodwin 2016)

Export in Services: due to the unfavorable economic and political conditions the region has faced, trade exports in most of NA countries have declined. This has automatically induced a decline in 2016’s services’ exports by 22% compared to 2010.

Transport Export in Services:

NA’s transport services exports in 2016 are 27% of total services exported on average. In value, this translates to \$12.7 billion of total \$37.5 billion.

In 2016, the total sub-regional value of services exported was \$37.6 billion. Its share of the total continental exported services declined from 51% in 2010 to 39% in 2016 while the continental services exported grew by 0.6% in the same period to 95.9 billion in 2016.

The NA transport service exports are 48% of total African transport services exported.

Egypt has the highest contribution of transport services exports in terms of both values and share of service exported. \$5 billion navigate through the Suez Canal which constitutes 61% of the Egyptian \$8.1 billion transport services exported in 2016. Morocco stands in the second position among NA member States. Thanks to its geographical location and diversified exporting economy. Morocco’s transport service value is \$2.6 billion and that is a share of 16.8% of total Moroccan services exported. Tunisia is third in terms of value with \$954 million followed by Algeria with \$672 million where transport services make up 29% and 20% of total trade services exported, respectively. This could be attributed heavily to the oil exports in Algeria as well as the dominance of the

tourism industry in Tunisia. Sudan’s efforts towards the promotion of its transit trade has multiplied its transport exports to the point that the share is 17% of its total trade services exported. Although Libya has a relatively high share of 39% transport exports to its total trade services exported, it has been heavily impeded by the political instability. Mauritania and Libya stand on the same grounds in terms of value of transport exported with vast room to improve infrastructure and services provided.

Table 2: Transport Export in Services

YEAR	Value (USD)	Million	% of Total Trade Services
Algeria		672	20
Egypt		8,191	60
Libya		33	39
Mauritania		33	12
Morocco		2,580	17
Sudan		260	17
Tunisia		954	29
Total NA		12,723	34
Africa		26,160	27

Source: (UNCTAD Stat, 2018)

Sea Transport: is composed of passenger, freight and other forms of transport. According to UNCTAD 2018, the total sub-regional sea transport exports for NA member States is \$3.6 billion for 2016 i.e. 28% of total transport services exported and 57% of total of the \$6.32 billion of Africa’s total sea transport exports (UNCTAD Stat, 2018). Nonetheless, this

The North African sea transport service exports are estimated to be \$3.6 bn in 2016 formulating 57% of total African sea transport services exported.

number is under-estimated, due to the absence of sea transport data for Libya and Sudan, and under estimation of the Egyptian sea transport services at a value \$2.3 billion for year 2016 when just the Suez Canal receipts are \$5 billion. Meanwhile, this could be a good indication of the remarkability of the sector on a regional level. Assessment for the sector’s importance will account for other indicators such as container throughput and merchant fleet as well as LPI.

E. Environmental Challenges Due to Maritime Transport

Although, maritime transport has been entitled as the most “efficient” mode of transport with the least impact on environment and limited carbon dioxide emissions, environmental challenges still take place. This is due to shipping, port operations and port-related industries where environmental externalities such as greenhouse gases, carbon monoxide, dioxide and nitrogen oxide emission, ocean noise, toxic and oil spillage, pathogens, habitat destruction due to establishments of ports that impact coral reefs are realized. In addition, bio-invasion occurs because of inward movement of non-indigenous species as a result of shipping transport.

Blue Economy does not treat ocean assets at face value, it accounts for the assets’ value and introduces natural accounting systems to incorporate ocean value into national accounts.

Mainstreaming of climate change besides environmental considerations that encompasses environmentally sustainable infrastructure (e.g., green ports) into existing and new Blue Economy continental, sub regional, and national plans, policies, and relevant legislation is paramount for sustainability of African economies (AFDB and UNECA, 2017). The sub-region stands on a relatively good ground in terms of green economy measures however maritime transport is among the sectors that hold remarkable room for improvement. BE is low-carbon, efficient, and clean. Its growth is driven by investments that reduce carbon emissions and pollution, enhance energy efficiency, harness the power of natural capital—such as the oceans—and halt the loss of biodiversity and the benefits that ecosystems provide (World Bank and United Nations Department of Economic and Social Affairs 2017) The BE understands the ocean’s contribution to wealth creation, the sustainability of that contribution as well as the sources of all sustainability threats (Colgan 2016).

Maritime Transport and Blue Economy

The blue economy holds significant potential to contribute to higher and faster GDP growth in Africa. Through marine and maritime services provision as well as transport blue growth shall be realized which serves as a foundation for sustainable development in Africa. Accounting for the existing large share of trade through maritime transportation (>90 percent) across the African continent of which NA’s share is nearly 50% of the total continental value of transport and sea transport services are exported. This presents a unique opportunity to put in place relevant policies and strategies to maximize benefits from this sector towards blue growth on a sub-regional and continental level.

III. Blue Tourism in North Africa

A. Tourism’s Economic Importance in NA

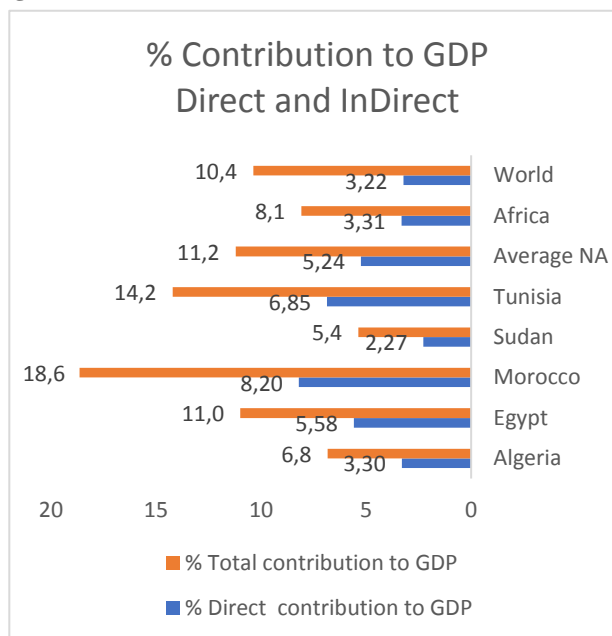
Tourism, a growing industry, is a vast employer and a significant contributor to national income. Since the second half of the 20th century, tourism has been defined as the most propulsive industry growing and witnessed economic growth. This takes place through revenue generation, business provision, investment attraction, infrastructure development as well as job creation. Tourism plays an important role in the African and NA region that are enriched with its natural and diverse resources that attract tourists. The NA region is rich in both touristic historical sites besides the coastline whether through the Mediterranean, Red Sea or the Atlantic Ocean making it one of the most attractive in the world for tourists

On a global level, it has been defined an economic driver for growth that had a direct contribution³ to the world’s income by \$2.3 trillion in 2016 such that increased by 13%, \$0.3 trillion to \$2.6 trillion in 2017(WTTC 2018). In terms of employment, tourism has globally generated 109 million jobs in 2016 and 119 million jobs in 2017, increasing by 10 million jobs, an increase of 9%. As an industry it is considered among the seven largest business sectors in the world economy(Rangel-buitrago et al. 2019). On a wider scale, it contributed to global GDP through indirect⁴ and induced impacts⁵ by \$7.6 trillion in 2016 that increased by 10% to \$8.3 million in 2017. It has also supported 292 million jobs that increased by 7% to 313 jobs 2017. Tourism jobs hold 10.2% share of the global jobs share where 1 in 10 jobs are in the touristic industry (WTTC 2017).

Intra African tourism level is targeted to increase tenfold as one of the main targets of goal 1.4 transformed economies across Africa in former aspiration “a prosperous Africa, based on inclusive growth and sustainable development” Agenda 2063.

Contribution to NA’s GDP: direct contribution to the total NA⁶ GDP tourism contributes by 5.24%, a total of 30.1 billion in 2017. In terms of indirect contribution, tourism contributes by an average 11.2% to total North African GDP. Despite the relatively higher direct contribution in NA compared to Africa and the world, it still stands below in terms of the indirect contribution.

Figure 3: Tourism’s Contribution to GDP 2017



Source: (WTTC, 2018)

The highest % direct contribution to GDP in the member States economies is in Morocco where tourism contributes by 8.2% followed by Tunisia 6.9% then Egypt 5.6%. The highest direct contribution among members in terms of US \$ billion is Egypt with a share of 36% among the NA total direct contribution to GDP by \$10.7 billion, followed by Morocco 29% \$8.8 billion, Algeria 18%, \$5.4 billion. 2017 presented a year where the world’s, Africa’s and North Africa’s direct and indirect contribution to GDP has increased in both nominal values and shares (WTTC, 2018).

North African’s share of total contribution (direct and indirect) to Africa’s GDP is 35% of the continental share. North Africa contributes to the total of \$177.6 billion by \$63.6 billion.

³ Direct Contribution to GDP definition: GDP generated by industries that deal directly with tourists, including hotels, travel agents, airlines and other passenger transport services, as well as the activities of restaurant and leisure industries that deal directly with tourists.

⁴ Indirect Contribution to GDP accounts for the following three categories:

- Capital Investment: Includes capital investment spending by all industries directly involved in Travel & Tourism. This also constitutes investment spending by other industries on specific tourism assets such as new visitor accommodation and passenger transport equipment, as well as restaurants and leisure facilities for specific tourism use.
- Government Collective Spending: Government spending in support of general tourism activity. This can include national as well as regional and local

government spending. For example, it includes tourism promotion, visitor information services, administrative services and other public services

- Supply Chain Effects: Purchases of domestic goods and services directly by different industries within Travel & Tourism as inputs to their final tourism output.

⁵ Induced Contribution: The broader contribution to GDP and employment of spending by those who are directly or indirectly employed by Travel & Tourism

⁶ WTTC has worked accounted for both Sudan and South Sudan as a one country, where data was not segregated. The same dataset was available at the World Bank data indicators. Mauritania and Libya’s economic tourism’s data was unavailable thus the region was compiled as 5 countries

NA's share to the global tourism's direct contribution declined from 1.5% in 2010 to 1.2% in 2017, although 2017's was the highest increase in the past 7 years. This could be attributed to the political up rise; however, with the concurrent endorsed stability and regional efforts, tourism is a booming sector. The trend is the same trend for the total contribution to GDP shares, it held the highest rate of contribution to continent with a rate of 36% yet it is projected to decline to 34% by 2028 (WTTC, 2018). This could be due to the disturbed investment climate, security issues and instability witnessed.

Contribution to Employment: As an industry, tourism has been growing with a remarkable potential to provide for high-quality job opportunities and ongoing growth that enables and empowers national and regional development. Within the North African sub-regional context, tourism marks an important source of income for North African nations as well as a source of employment. Looking at the geographical context of the North African countries where most are Mediterranean's, tourism marks a major pillar in their

Research shows that for every 30 new tourists to a destination one new job is created; It is estimated that every job in the core tourism sector creates about 1.5 additional or indirect jobs in the tourism-related economy (World Economic Forum 2017). In 2013, 7 million full time jobs were realized in maritime and coastal tourism. In the NA region, every job creates 1.2 jobs; 14% below the continental rate. The highest is Sudan which creates 1.6 jobs, followed by Morocco that creates 1.3 additional jobs. Egypt shares the continental average of 1.2 jobs while Tunisia and Algeria fall at 1.1 additional and indirect jobs. Further efforts to develop the investment climate in the sub-region will induce the number of jobs created.

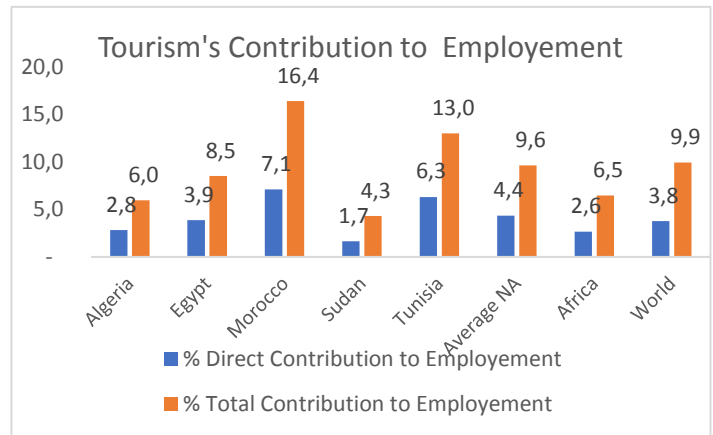
economy. However, across the region tourism's contribution to employment varies. For instance, Morocco's job market is the most dependent on tourism that contributes to the total direct and indirect employment by 16.4% and 7.1% as direct contribution. Second comes Tunisia with 13% and 6.3% followed by Egypt 8.5% and 2.8% as a share for total and direct contribution to employment successively. Similarly, like direct contribution to GDP that presents half the total contribution to GDP

direct tourism jobs share the half of the total jobs created. The average sub-regional contribution to employment is 4.4% for direct jobs and 9.6% for indirect jobs.

North Africa's share in the continental direct jobs generated by tourism is 28% in 2017, slightly higher from 2016 with a share of 26%. North Africa's direct tourism jobs are 2.6 million while total jobs is 5.8 million, where both categories have grown by 12% and 13% successively. Among member states, the highest share in terms of jobs generated in number, is Egypt with 2.4 million jobs

and a share of 41% of the sub-region's total tourism's jobs. Morocco comes in the second place with 1.9 million and a 32% share.

Figure 4: Tourism Contribution to Employment (Direct and Indirect)



Source: (WTTC, 2018)

B. Blue Tourism

Blue Tourism is concerned with the touristic activities taking place around and within the aquatic resources (oceans, seas and rivers) in particular incorporating and understanding the interlinkages between BE sectors. Coastal (also known as 3S – Sun, Sea and Sand (Rangel-buitrago et al. 2019))) as well as maritime tourism are one of the oldest and largest segments in the tourism industry. They contribute to the economies of the coastal nations and have increased in importance and competition during the past years thus increase the number of tourists to the beach. Recently, an upward consumption trend demand for marine tourism and particularly cruise tourism has taken place (OECD, 2016). This has held its negative spill overs in terms of social, economic and environmental impacts. The emergence of “blue” measures aims for touristic activities to continue however with generation of economic, social and environmental values enduring sustainable measures. Its development is expected to introduce the real value ecosystem services and at its heart the protection of environmental resources.

The NA sub-region is rich in extraordinary beauty, cultural wealth and great diversity that has made its beaches favourable destinations for various tourists where the sector holds significant importance in the blue economy and touristic industry in the region that is bounded by the Mediterranean and the Red Sea and Atlantic Ocean. These destinations are among the popular touristic destinations due to their resource wealth in terms of MPAs, beaches, coral reefs, etc. This multiplies the importance of maritime and coastal tourism, which is important for the bounding countries besides being a famous stop for the cruise tourism.

Economic Value of Coastal and maritime tourism are among the largest employers in the ocean Economy with a significant contribution to the coastal communities worldwide. For instance, OECD has identified coastal and maritime tourism that includes cruise industry as the second largest contributor to the blue economy with nearly one quarter of the total gross value added 1.5 trillion and average of 7 million employed in the sector. It also

The lack of data for NA's sector on coastal and maritime tourism has hindered the ability to measure it.

forecasted that by 2030, if the ocean economy continues running business as usual the share of maritime and coastal tourism in the total ocean economy would increase to become the largest

contributing sector. It was estimated the marine and coastal tourism had a value of \$390 billion in 2010 of which Europe has the largest share of 35% while Africa's is 9%. It is forecasted that coastal tourism contributes to the ocean economy by over \$777 billion and employs more than 8.5 million people(OECD 2016).

Agenda 2063 & Blue Tourism

Agenda 2063 has emphasized on Africa's natural resources: biodiversity, land, forests and wetlands which play a critical role for the population. It is through these resources that economic development and direct contribution is realized. Among the main sectors that relies on these resources and affects a remarkable portion of population is tourism, to such an extent that it is heavily endowed in the North African Economies. Accordingly, in the aspirations of Agenda 2063 tourism and blue economy have been incorporated solely and interactively. Goal 1.6 "Blue Economy for accelerated economic growth" accounts for the following targets of having at least eco-tourism contribution to GDP quadruple, besides increase the coastal tourism increase by 20% with at least 10% increase by 2020 and at least 10% of its public revenues are directed towards financing development programs of the communities (African Union 2015).

C. NA's Attractiveness & Competitiveness

Touristic Arrivals: International touristic arrivals have multiplied 50 times in the last six decades and grew by 83% during the past 16 years. Compared to 1960 where 25 million arrivals took place 2016 witnessed the arrival of 1.24 million tourists and it is forecasted to 1.8 million tourists in 2030. The trend is expected to continue growing on a global level although the NA's region growth was impeded by instability due to the political up rise.

Table 3: Touristic Arrivals in Millions 2010-2017

(millions)	2010	2017	Growth
Algeria	2.1	2.1	2%
Egypt	14.1	8.3	-41%
Mauritania	N/A	N/A	N/A
Morocco	9.3	11.3	22%
Tunisia	7.8	5.7	-27%
Sudan	0.5	0.7	41%
NA	33.7	28.1	-17%
Africa	50.4	66.3	32%
World	953.0	1,325.0	39%

Source: (UNWTO 2017)

NA held an increase by nearly 5 million tourists in 2017,19% compared to 2016 .Morocco is number one in the region in terms of touristic arrivals with a share of 40% and increase in 2017 with 1 million tourists, 9.7%. Egypt is the second in the region with a share of 29% and its visitors increased by 54% compared to the past year. Tunisia comes in the third position with a share of 20%, 5.7 million tourists with no growth compared to the past year. The three countries present 90% of total arrivals in 2017.Accounting for the exotic coastline and rich

2017's NA touristic arrivals stand at a total decline of 17% compared to 2010. Nevertheless, NA's touristic arrivals share 39% in 2017 of the continental arrivals.

BE resources which increase the wealth of the NA region further efforts can be implemented to boost touristic arrivals. Among them is marketing and branding through innovative products to renovate the image of coastal destinations thus attract new segments.

Tourism Infrastructure: presents the basis of tourism development and utilization of existing destination resources. It is fundamental in term of competitiveness and plays an important role in attracting tourists. They account for transport, social and environmental infrastructure that encompass but unlimited to the chain of roads, airports, railways, accommodation facilities and national and marine parks. Assessing the quality of tourism infrastructure, the NA region stands on good foot in terms of member states rank and score as per the World Economic Forum travel and tourism competitiveness index (TTCI) sub-index. As tourism infrastructure is rapidly expanding particularly along coastal line, it is fundamental to account for the blue measures. BE measures shall empower eco-infrastructure, one that ensures that the benefits are delivered to local communities as well as protects the environment and increases the tourism towards sustainability overcoming negative impacts.

Table 4: Quality of Tourism Infrastructure Rank: Sub-indicator of the Composite Travel and Tourism Competitiveness Index

	Rank	Value
Algeria	132	2.92
Egypt	39	5.27
Libya	N/A	N/A
Mauritania	108	3.75
Morocco	47	5.08
Sudan	N/A	N/A
Tunisia	80	4.48

Source : (World Economic Forum, 2017)

D. Environmental Challenges

The BE accounts for the needs of the environment and therefore incorporates environmental sustainable measures into its guidelines for tourism's promotion. However, through mass tourism towards coastal and maritime attractions, biodiversity is threatened by impacting the habitat integrity and threatening the vulnerability of species (Honey and Krantz 2007). Further challenges were addressed by (Rangel-buitrago et al., 2019)

- Habitat and diversity loss
- Loss of amenity and physical destruction
- Pollution
- Resource exploitation and competition
- Community limited benefit and engagement
- Seasonality and demand sensitivity

Coastal and marine damages can come from several other causes. For instance, infrastructure if they are not planned with social and environmental practices in mind; coastlines worldwide can come under siege due to the impacts of inappropriate tourism development (Spalding, 2016). Thus, the incorporation of blue measures is crucial to navigate the proposed risks and ensure sustainability.

Marine Protected Area (MPA): As part of ecosystem-based management (EBM), MPA have been designated towards conservation and protection of marine resources. It has been demarcated by law and they compass intertidal, sub-tidal and pelagic environments. Through many MPAs, protection has a spectrum from multiple use (i.e. some fishing and recreational activities are allowed) to no take i.e. (fishing, mining, drilling and further extractive activities are prohibited" and in some cases, no usage takes place (OHI, 2018). The relevance and significance of MPAs account for ecological, human and economic impacts. The former is realized

According to (Reuchlin-Hugenholtz and McKenzie (2015), increasing the global MPA coverage up to 30% of the world's ocean would accrue economic benefits to \$920bn by 2050 and create new jobs from 150K-180k in MPA management (OHI, 2018).

because of endangered species and aims to ensure marine biodiversity. This takes place through the protection from certain pressures such as fishing, sea surface temperature besides ocean pacification. The human impact is actualized via maintaining the critical breeding grounds and nurseries for fish, which realizes increased abundance and size of commercially important species of fish for human consumption. The economic impact, which is realized as MPAs provides a broad range of sustainable coastal livelihoods. MPAs are measured through different indicators; among them is indicator 14.5.1 for SDG 14 that measures the percentage coverage of protected areas in relation to marine areas (EEZ).

Table 5: Coverage of Protected Areas in Relation to Marine Areas (EEZ)%

Country	Value%	Marine Area (km2)	Total Marine Area (km2)
Algeria	0.1	110	128,993
Egypt	5.0	11,716	236,612
Libya	0.6	2,278	357,895
Mauritania	4.2	6,488	156,198
Morocco	0.3	718	276,136
Sudan	16.0	10,662	6,786
Tunisia	1.0	1,042	100,661

Source ((UNEP-ECMC, 2018))

According to (OHI, 2018) the reference point to the percentage of MPAs from EEZ is 10% where in all member States with the exception of Sudan deviate significantly. Sudan stands out in protection performance with its latest efforts in promoting tourism industry relying on the Red Sea resources. It also registered several MPAs with the UNESCO mainly, Sanganeb Atoll and Dunganob Bay. Another indicator to assess the MPAs is the percent of each country's coastal waters out to 3 nautical miles that have been designated to MPAs. According to (OHI, 2018) the reference for that is 30%. For NA member states, none has allocated any area as MPAs, thus the region deviates significantly in terms of implementation with respect to this indicator. It is recommended to promote MPA's policies and enhance their enforcement in the sub-region due to the multiplied benefits it shall endure.

Enforcement of Environmental Regulations: despite the acknowledgement of environmental regulations in the NA national strategies, enforcement holds room for improvement. TTCI has accounted for the degree of enforcement of environmental regulations as a sub-indicator. The NA region proved to be standing on the weak ground in terms of enforcing environmental regulations. Although Morocco holds the highest rank in the region, further room improvement exists in its score. Compared to the 2015 rank, most countries have improved except for Tunisia and Mauritania. This requires raising the awareness of decision makers and citizens on the costs of environmental degradation alongside the improvement of the regulatory framework and enforcement activity.

Table 6: Enforcement of Environmental Regulations Sub-indicator of the Composite Travel and Tourism Competitiveness Index

	Rank 2015	Rank 2017
Algeria	132	121
Egypt	139	135
Libya	NA	NA
Mauritania	88	128
Morocco	89	72
Sudan	NA	NA
Tunisia	91	112
Source (World Economic Forum, 2017)		

IV. Roadmap Towards Transitioning to BE in NA

The NA region has proved to be rich in BE resources besides its strategic geographical location that multiplies the significance of the BE as a “motor” to drive the growth in the sub-region. In fact, transitioning towards the BE shall empower local and regional development through harnessing the array of its aquatic wealth. Through the transpose, the exploitation of BE’s economic benefits, capitalization on the widespread BE natural resources, diversification of the economy through the ocean-based industries and expansion of social and the economic benefits shall multiply.

Developing a BE strategy is inevitable to exploit this potential.

The Africa’s Blue Economy: A Policy Handbook developed by (UNECA, 2016) aims to bridge efforts towards formulating a BE strategy and endorsing it among concurrent national strategies. The following milestones extracted from the Policy Handbook shed the light on the necessary guidelines towards promoting the BE in NA to serve as an engine for diversification, growth and development.

Step 1: Agenda Setting, Awareness and Sensitization:

Status: BE is partially conceived and understood and far from being developed in terms of application. The NA region falls behind in terms of:

- Assessing the potential of aquatic surfaces, the ocean assets as well as the various industries and services taking place.
- Availability of marine database.

Guidelines:

- Communicate a sense of urgency for action.
- Study the BE resources.
- Promote awareness through policy dialogues and awareness raising meetings
- Update existing baseline information on the BE sectors, national, regional and international sources.

Developing a BE Strategy is essential to ensure the maximization of ocean benefits in alignment with the BE principles endowed in the SDGs.

It would be fundamental to develop a comprehensive database in order to bring forward BE evidence-based policies and enhance the implementation of BE principles.

- Prepare and disseminate synthesis report.

Step 2: Formulating the BE Policy in Coordination

Status: Absence of a coordinating body for the BE policy committee.

Guideline: Develop a BE coordinating body to facilitate the policy making process.

- Ensure an integrative strategic framework through which private, public and non-governmental bodies engage in the formulation process.

Step 3: Building National ownership of the BE policy formulation

Status: BE sectors in the NA have been incorporated within national policies in a sectorial basis. Having a BE strategy after further development and comprehension to the various interlinkages among sectors is necessary for capitalizing on the BE resources.

Guidelines: BE sectors develop in integration rather than isolation. This entails coordination among the different member states’ bodies ensuring clear allocation of roles and responsibilities. This entails

- **Consensus Building**
- **Communicating the BE policy**
- **Stakeholder engagement**
- **Empowerment of key actors**
- **Building of a BE culture**

Step 4: Sector Identification and Prioritization

Status: NA holds numerous BE sectors, each holds distinct characteristics and regulatory framework it is essential to identify and prioritize sectors in terms of policy design and implementation

Guidelines: it is essential to identify and prioritize sectors in terms of policy design and implementation. Among the recommended sectors in the NA would be maritime transport and tourism.

However, mining and aquaculture also hold significant relevance in the region.

Step 5: Designing the BE policy

Status: the NA sub-region lacks a BE policy on both national and sub-regional level.

Guidelines: Design a BE policy and framework for implementation and regulation. This entails

- Address regulatory and reform
- Scenario Building for desired developmental outcomes
- Bring forward political support and buy-in
- Analysis of institutional Capacity and skills gap
- Establish measurable milestones associated with timeliness and requisite actions

Step 6: Policy Implementation

Guidelines:

- Establish institutional roles and functions for implementations
- Develop an action plan
- Resource mobilization

Step 7: Monitoring and Evaluation Policy Guidelines:

- Developing a monitoring and evaluation framework
- Periodic review of the implementation progress

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