



CAPTURING OPPORTUNITIES FOR INTEGRATED COASTAL ZONE MANAGEMENT AND THE BLUE ECONOMY IN MENA

Lia Carol Sieghart, Joseph Allen Mizener, Jeff Gibson¹

Introduction: The MNA region has rich marine ecosystems that can play a key role in eroding extreme poverty and promoting shared prosperity through the Blue Economy—the sustainable use of marine resources for economic growth, improved livelihoods, jobs, and overall ecosystem health. The Blue Economy includes a wide range of activities, from fisheries and aquaculture to other ecosystem services such as carbon sequestration, coastal protection, and biodiversity.ⁱ For example, MNA has large coastal areas important to the livelihoods of hundreds of thousands of people, many of them poor and vulnerable. These include fisheries and aquaculture, much of it small-scale and increasing substantially in recent years, from 2,484,644 and 393,987 metric tons, respectively, in 2000 to 4,743,814 and 1,820,983 metric tons in 2016.ⁱⁱ Many MNA countries rely heavily on imports for food and fisheries and aquaculture supplement the food supply, impacting food security and nutritional diversity. These ecosystems also play a role in climate change mitigation and adaptation as seas absorb carbon dioxide (CO₂) and coastal habitats, like mangrove forests and sea grass beds, sequester carbon and help to protect coastlines, preventing erosion from floods and storms. Integrated coastal zone management (ICZM)—which coordinate policies, activities, and investments impacting coastal and maritime resources—are critical to capturing the opportunities of the Blue Economy.ⁱⁱⁱ

Key challenges: Climate change and various harmful anthropogenic activities threaten the success of these opportunities. The MNA region is one of the most vulnerable regions to climate change which poses a great risk to marine resources through thermal stress, acidification, oxygenation, and increased instances of extreme weather events. For example, increasing water temperatures in the region will alter regional species distribution and catch composition as species migrate. Higher atmospheric CO₂ concentrations impact water pH levels. Warmer water holds less oxygen which impacts the viability of seafood that holds nutritional and economic value for the region (i.e. crustaceans). Low-oxygen “dead zones”—areas devoid of marine life—have quadrupled since 1950, including an area the size of Scotland recently discovered in the Arabian Sea off the coast of Yemen and Oman.^{iv} Additionally, sea level rise contributes to coastal erosion, property inundation, and saltwater intrusion into freshwater supplies and agricultural irrigation. Climate change can also be a threat multiplier amplifying existing fragilities, such as conflict over natural resources. Anthropogenic activities, such as overfishing and habitat degradation, also stresses marine resources. Overfishing depletes MNA fish stocks and indirectly degrades ecosystems through bycatch - the accidental capture of untargeted species. Destructive practices like bottom trawling, dredging, longlining, and gillnetting. Unregulated coastal development, deforestation, and mining, as well as pollution also impact habitat degradation limiting the potential of the Blue Economy.

¹ With the ENR Global Practice (Middle East and North Africa Team)

An integrated response: Addressing these challenges urgently, and at a systemic level, is important to the development of a comprehensive approach that facilitates successful, long-term engagement in the Blue Economy. Such an approach will need to go beyond piecemeal activities and should incorporate elements to strengthen governance, enhance data, and expand market access, all with an inclusive lens that considers the poor and vulnerable groups. For example, improving the governance of the management of marine ecosystems, through the promotion, regulation, and monitoring of practices is an important contributor to curbing unsustainable practices (i.e. illegal, unreported, and unregulated fishing etc.), building resilience to the impacts of climate change, and protecting the livelihoods of poor and vulnerable. Disruptive technology could strengthen data collection on marine resources, such as catch volume and composition, ocean health, pollution, fish stocks, and climate impacts and improving valuation of these resources and other ecosystem services. This will inform decision-making and facilitate evidence-based policy-making. With a view to incentivizing and promoting sustainable practices and creating jobs, improving market infrastructure and access, especially for small scale and artisanal fishers, present opportunities to capture inclusive growth, catalyze investments (including through the private sector) and increase resilience. For example, there is an increase in demand for sustainable seafood, particularly in Europe and North America. Investments in market infrastructure, inputs, and capacity can take advantage of this demand while building the resilience of MNA's natural resources.

World Bank engagement in the Blue Economy: The World Bank has adopted such a comprehensive approach and is committed to leveraging its capital, technical expertise, and convening power in the Blue Economy.^v Over the last 10 years the World Bank has very successfully scaled up its Blue economy investment program. Its active Blue Economy portfolio—which includes projects that include activities such as ICZM, regional fisheries and aquaculture programs, and marine pollution management—is around \$4.1 billion, with a further \$1.5 billion in the pipeline. Systematically

embarking in ICZM and expanding the blue portfolio has the potential to serve as a catalyst for sustainable economic growth, improved livelihoods, social inclusion, and more resilient oceans and coastal areas. This applies across MNA and potential examples include:

Expanding on Opportunities in Egypt: Aquaculture in Egypt has grown significantly over two decades highlighting the Blue Economy's potential. It is the largest source of fish, contributing to 65% of fish production^{vi}, is the least expensive animal food source (specifically tilapia) and crucial to the food security of the poor and vulnerable.^{vii} The sector's growth and expansion and others dependent on marine resources, will require an integrated approach addressing key constraints including inefficient policies, lack of access to modern technologies, high production costs, and the Nile's decreasing water quality of the Nile, its tributaries and the Mediterranean's coastal waters due to municipal and industrial effluents, agricultural drainage, and decreasing flow. Opportunities exist to invest in blue growth through support to ICZM, fisheries reform, institutional and community capacity development, and cost-effective sewage runoff treatment to maximize Egypt's access to Mediterranean and Red Sea marine ecosystems.

Tapping into Djibouti's Potential: The fisheries sector in Djibouti has an approximate yield of 1,800 metric tons even though the sustainable exploitable potential is estimated to be more than 30,000 metric tons.^{viii} The Blue Economy, through fisheries and other avenues, can improve livelihoods, food security, and resilience strengthening in a lasting and equitable manner. Opportunities involve addressing key constraints by supporting ICZM through the facilitation of an enabling environment for the private sector through increased market access and the promotion of international sanitary standards, supply chain development (including increasing access to technology), strengthening institutional capacity for marine and coastal resource management, investing in high potential sectors like tourism, and promoting local demand for seafood by raising public awareness on its benefits. Such activities should also seek to conserve and protect coastal and

marine resources; particularly, in light of environmental risks surrounding high urban growth and Djibouti's vulnerability to climate-related shocks and stressors.

Diversifying in Algeria: Algeria is far from its potential and establishing an integrated approach could enable the Blue Economy to feed a growing population, promote economic diversity, meet future energy demands, and build resilience to climate change. For example, fishing, though a traditional vocation, is not fully exploited.^{ix} Opportunities include modernization of fishing fleets and processing facilities. Aquaculture development is prioritized by the Government and investments in access to inputs, such as feed, and capacity building for farmers could fuel job growth and increase food security and nutrition through affordable sources of protein. The energy sector can also contribute; for instance, through offshore wind farms. Current and future investment in this sector is in direct response to the Government's commitments to integrate renewable electricity into its markets and will contribute to a reduction in greenhouse gas emissions, diversify the economy, create jobs, and present a viable option for increased private sector engagement.

Restoring engagement in Yemen: Traditionally, fisheries have played a critical role in Yemen. Two million people depended on fisheries which was the second largest revenue earner after oil before the war.^x Support to ICZM, the fisheries sector, and other Blue Economy activities remains crucial for Yemen's development. Since the beginning of the crisis, the fisheries sector has seen a 50% drop in production with 65% fishermen unemployed.^{xi} This disruption in production has degraded human capital, with significant impacts on public health and child development. Remedies include emergency restoration and strengthening of key inputs and infrastructure (e.g. fishing boats, cold storage, access roads, and landing sites), via cash support, short-term employment, and other support to reconstruction and rehabilitation. A focus on gender issues and supporting the vulnerable and marginalized will enhance social stability.

Protecting coastal assets in Tunisia: Tunisia's Blue Economy is important to sustainable

development and job creation. Its coast is home to over 65% of the population and contributes to important economic activities; notably, travel and tourism. For example, in 2016, travel and tourism contributed to 13.7% of the GDP and 12.6% of total employment—430,000 jobs.^{xii} Climate change has a severe impact of this sector, among others, as Tunisia is very exposed to sea-level rise. While the Government of Tunisia has taken several steps to protect its coastal assets and build its resilience to climate change, there is a need for a clear development plan, enhanced capacity, and additional investments. An ICZM plan would include measures to protect biodiversity and natural resources key to the travel and tourism sector, such as investments to decrease shoreline erosion (i.e. breakwaters, seawalls, levees, protection of reefs, beaches, barrier islands, dunes, and vegetative buffer zones), but should also address key issues such as urbanization, pollution, lack of public awareness and participation in natural resource management, as well as the exploration of opportunities to leverage private sector capital and resources to address climate change and strengthen value chains of the Blue Economy.

Building off experience in Morocco: Coastal zones and related ecosystems are critical to Morocco's growth, with high potential to provide employment and contribute to food security through sectors such as tourism, agriculture, fisheries, and other natural resource-based activities. However, their sustainability is threatened by rapid urbanization, associated competition over the use of and access to natural resources, and the impacts of climate change (i.e. sea-level rise, coastal erosion, increased water temperature, increased salinity of water supply)—all necessitating a clearly defined roadmap to inform development planning, foster dialogue, and build capacity to manage the coastal zones sustainably while improving livelihoods. The recently closed *Integrated Coastal Zone Management Project* (P121217) piloted the application an ICZM approach in Morocco's Eastern Mediterranean coast. Key activities included institutional strengthening, capacity building, mainstreaming ICZM in local development, civil works restoring wetlands and dunes, pilot fisheries, and promotion of eco-tourism. The pilot's success is due to strong local

ownership through intensive training, capacity building, and public awareness raising - key to sustaining and scaling-up the ICZM approach in Morocco and replicating in neighboring countries.^{xiii}

Conclusion: Taking advantage of ICZM and MNA's Blue Economy opportunities requires countries to invest in strengthening institutions, policies, and strategies for sustainable development, catalyze investments to restore and protect coastal habitats, scale up aquaculture and modernize fisheries, explore new sectors and markets, and facilitate community participation in resource management - all directly aligned with the [Blue Economy work program](#)^{xiv}, Sustainable Development Goal 14^{xv}, resources such as [PROBLUE](#)^{xvi}, as well as the WBG's new climate targets for 2021-2025^{xvii} which doubles current investments to around \$200 billion for ambitious climate change actions such as helping

countries increase resilience to climate-related shocks and mitigating stressors in coastal areas. These actions could provide the momentum to scale up efforts and boost regional cooperation and expanding the World Bank's blue portfolio in an inclusive manner for greater jobs, income, and food while safeguarding marine resources for the future.

Contact MNA K&L:

Anna Bjerde, Director, Strategy and Operations, MNA

Sajjad Ali Shah, Manager, MNADE

Regional Quick Notes Team:

Omer Karasapan, Mark Volk

Tel #: (202) 473 8177

The MNA Quick Notes are intended to summarize lessons learned from MNA and other Bank Knowledge and Learning activities. The Notes do not necessarily reflect the views of the World Bank, its board or its member countries.

ⁱ World Bank and United Nations Department of Economic and Social Affairs. 2017. *The Potential of the Blue Economy: Increasing Long-term Benefits of the Sustainable Use of Marine Resources for Small Island Developing States and Coastal Least Developed Countries*. Retrieved from <https://openknowledge.worldbank.org/handle/10986/26843>

ⁱⁱ FAO. 2018. *FAO Yearbook of fishery and aquaculture statistics 2016*. Retrieved from <http://www.fao.org/3/i9942t/I9942T.pdf>

ⁱⁱⁱ World Bank and United Nations Department of Economic and Social Affairs. 2017. *The Potential of the Blue Economy: Increasing Long-term Benefits of the Sustainable Use of Marine Resources for Small Island Developing States and Coastal Least Developed Countries*. Retrieved from <https://openknowledge.worldbank.org/handle/10986/26843>

^{iv} Breitburg et al. (2018). Declining oxygen in the global ocean and coastal waters. *Science*, 359(6371), eaam7240. DOI: 10.1126/science.aam7240.

^v World Bank. 2016. *Blue Economy Development Framework – Growing the Blue Economy to Combat Poverty and Accelerate Prosperity*. Retrieved from <https://bit.ly/2rzOjUO>

^{vi} FAO. 2010. *National Aquaculture Sector Overview, Egypt*. Retrieved from http://www.fao.org/fishery/countrysector/naso_egypt/en

^{vii} Ababouch, Lahsen. (2015). *Fisheries and Aquaculture in the Context of the Blue Economy*. Retrieved from <https://bit.ly/2PmHsf2>.

^{viii} World Bank Group. 2013. *Djibouti – Country Partnership Strategy for the period FY2014-2017*.

Retrieved from <https://bit.ly/2QypDei>

^{ix} FAO. 2015. *Fisheries and Aquaculture Country Profiles: The People's Democratic Republic of Algeria*. Retrieved from <http://www.fao.org/fishery/facp/DZA/en>

^x FAO. 2018. *Yemen, Plan of Action: Strengthening resilient agricultural livelihoods (2018-2020)*. Retrieved from

<http://www.fao.org/resilience/resources/resources-detail/en/c/1113449/>

^{xi} UNOCHA. 2017. *The humanitarian situation in Yemen in facts and figures*. Retrieved from <https://bit.ly/2eW9kml>

^{xii} World Travel & Tourism Council. 2018. *Travel & Tourism: Economic Impact 2017 – Tunisia*. London, UK. Retrieved <https://bit.ly/2RSDI2O>.

^{xiii} World Bank. 2018. *Implementation Completion and Results Report*. World Bank, Washington, DC, USA. Retrieved from <https://bit.ly/2zWHIbJ>.

^{xiv} World Bank. 2018. *Oceans, Fisheries and Coastal Economies*. Retrieved from

<https://www.worldbank.org/en/topic/environment/brief/oceans>

^{xv} Conserve and sustainably use the oceans, seas and marine resources for sustainable development

^{xvi} World Bank. 2018. *World Bank Announced New Global Fund for Healthy Oceans*. Retrieved from <https://bit.ly/2PC2Qcs>

^{xvii} World Bank Group. 2018. *Adaptation & Resilience Action Plan: Key Messages*. Retrieved from <https://bit.ly/2BnJ0wy>.