

All things to all people: What different groups mean when they talk about the Blue Economy

Editor's note: The term on everyone's lips (and documents) these days is Blue Economy. In this issue, The Skimmer takes a look at what various groups mean when they use this term, how it came about, what it looks like in practice or could look like in practice, and why it has some people worried. We'd love to hear your thoughts and experiences about the Blue Economy in the Comments section below.

So what in the world is the 'Blue Economy'?

- It really depends on whom you ask. The term Blue Economy means a lot of different things to a lot of different groups. For example, the [World Bank](#) defines the Blue Economy as the "sustainable use of ocean resources for economic growth, improved livelihoods, and jobs while preserving the health of ocean ecosystem." In contrast, a recent [European Commission document](#) defines it as "all economic activities related to oceans, seas and coasts."
- A [2015 article by Silver et al.](#) analyzed preparatory documents for and discussions of the Blue Economy at the 2012 UN conference on Sustainable Development (aka Rio+20) and described four general ways that groups were conceptualizing what the Blue Economy is. [Voyer et al. 2018](#) reviewed newer documents and updated those initial conceptualizations of the Blue Economy to the following:
 - Oceans as natural capital: This use of Blue Economy is used to express the [importance and value of marine ecosystem services](#). It is used primarily by environmental organizations and is used to promote the societal and economic benefits (e.g., ecotourism opportunities, carbon markets, payments for ecosystem services) of environmental protection and restoration activities. Such activities include the creation of marine protected areas, decarbonization, and climate change mitigation. This conceptualization promotes [protection of species and ecosystems as a driver of economic development rather than a competing priority](#) and is the [least common conceptualization](#) of Blue Economy of the four.
 - Oceans as good business: This use of Blue Economy is used to express the [importance of marine industry to national and international economies and societies](#). It is used by marine industry and business; developed and developing nations including the EU, China, India, and OECD countries; as well as some development agencies. It promotes valuation of, strategies for growing, and investment in economic sectors related to the ocean with the goal of increasing economic growth and employment. The degree of attention paid to the environmental sustainability of this growth varies widely, although one of the most common understandings of the Blue Economy is "[use of the sea and its resources for sustainable economic development](#)".
 - Oceans as a source of livelihoods and development opportunities: This use of Blue Economy emphasizes [the use of the ocean to provide employment and income; alleviate poverty; provide food security; and build social and economic resilience to climate change, natural disasters, and economic downturns](#). It is used primarily by small island developing states (SIDS, particularly Indian and Pacific Ocean SIDS), developing countries, development agencies, and small-scale fisheries organizations. It focuses on small-scale fisheries, ecotourism, and aquaculture to alleviate poverty and provide food security and seeks investment in measures to [reduce climate and environmental risks](#) to people and infrastructure.
 - Oceans as a driver of innovation: This use of Blue Economy promotes the [ocean as a source of new wealth](#). It focuses on finding new ways to use the ocean, both by innovating in existing industries and developing new industries such as marine biotechnology, renewable energy, and deep sea mining. It is promoted by industry, governments, and some academic institutions. It emphasizes public and private investment - [often using innovative financing mechanisms, establishment of research institutes and networks, and innovation competitions](#) - to stimulate technical and technological advances.
- These conceptualizations are by no means mutually exclusive, and some organizations' views of Blue Economy incorporate aspects of several or all of them. In addition, other critical ideas frequently associated with the Blue Economy (sometimes as part of the above conceptualizations) include:
 - The idea that technology innovation (aka 'eco-innovation') can [lead to economic development while also protecting natural resources](#). One variant of this - 'technological optimism' - believes that [more efficient technology will be able to increase economic productivity for the same or reduced natural resource use](#).
 - The idea that the [private sector should be more integrally involved in governance, science, and monitoring](#) and that [human-ocean interactions should be increasingly structured through markets \(e.g., payments for ecosystem services, blue carbon markets\) and incentives](#) to improve the environmental sustainability of public and private sector practices.
 - For Pacific SIDS, the idea that [benefit-sharing agreements \(particularly for industrial fishing and mineral exploitation\), partnerships for technology transfer \(e.g., for the fight against IUU fishing\), and investments](#) can lead to more equitable national development that is respectful of their culture and livelihoods. For Pacific Island nations, Blue Economy distinguishes itself from other sustainability models by [paying more attention to local power dynamics and institutions, as well as, the influence of outside agents](#).

Wow! That's a lot of different meanings for Blue Economy. Are there any aspects that they all have in common?

- While some of these conceptualizations and ideas are quite different (and can lead to very different types of implementation activities), they do share a number of things in common, namely:

1. They emphasize economic valuation of some or all aspects of the ocean economy, including natural assets. This valuation forces recognition of the importance of the ocean economy to overall economies, allows comparison of different sectors of ocean economies^[1], can show the social and economic benefits of healthy ocean ecosystems, and can show how economies and human well-being are "devalued' through unsustainable practices".
 2. They depend on increased "designation and delimitation of spatial boundaries in the ocean". In a sense, all of the Blue Economy conceptualizations can trace their origins to the UN Convention on the Law of the Sea (UNCLOS) adopted in 1982 which gave coastal states sole exploitation rights for natural resources in their 200-nm Exclusive Economic Zones. (Read details and caveats here.) For many coastal nations, particularly SIDS, this meant atremendous increase in territory and access to resources. Now marine and maritime spatial planning (MSP) and marine functional zoning (in China) processes are often initiated to help determine appropriate locations for ocean uses. These processes provide a framework for reducing conflicts between ocean users for space and resources, balancing ocean uses with environmental protection, and providing certainty to businesses and investors – all critical aspects of operationalizing a Blue Economy. In cases where Blue Economy implementation prioritizes economic development over environmental sustainability and equity concerns, the MSP processes that are helping to operationalize that Blue Economy will generally reflect these objectives and vice versa.
 3. They emphasize and depend on increased maritime security (including combatting IUU fishing and piracy) to increase stability for development. It is estimated that IUU fishing accounts for as much as 30 percent of annual catch globally and creates global losses of tens of billions of dollars.
- A primary area where these conceptualizations differ, however, is in which sectors belong to or are emphasized in a Blue Economy^[2]. The 'oceans as natural capital' conceptualization excludes fossil fuel industries such as oil and gas extraction as well as environmentally-damaging industries such as deep sea mining. Many states emphasizing the 'oceans as a source of livelihoods and development opportunities' will also exclude or at least take a precautionary approach to these industries. As described earlier, groups emphasizing 'oceans as a driver of innovation' tend to focus on emerging industries such as marine biotechnology.

So if not everyone agrees on what Blue Economy means, why is it getting so much attention?

- The lack of a common definition of Blue Economy is likely to lead to misunderstandings at times, but the ambiguity (or 'conceptual fluidity' as one paper described it) of the term also makes it very powerful. Everyone wants a thriving Blue Economy, right? It's something that everyone can agree on – as long as they don't have to agree on what it means.
- Whatever is meant, the Blue Economy is becoming increasingly important in many arenas, including plans to achieve the UN Sustainable Development Goals.

So how did we get here? Where did this idea of the Blue Economy come from?

- The term 'Green Economy' emerged in the late 1980's and became popular in the 2008-2011 timeframe also with no widely agreed-upon definition. One popular definition comes from UN Environment: a Green Economy "results in improved human well-being and social equity, while significantly reducing environmental risks and ecological scarcities. It is low carbon, resource efficient, and socially inclusive." Another comes from the Green Economy Coalition: a Green Economy is "a resilient economy that provides a better quality of life for all within the ecological limits of the planet." In general, Green Economy proponents focus on development that is socially, economically, and environmentally sustainable.
- The green aspect of the Green Economy didn't fully resonate with all countries, though, particularly SIDS in the Pacific. For these nations, the oceans are integral to their economies and cultures. Consequently, during the runup to Rio+20 with its emphasis on the Green Economy (and 'Green Growth'), some SIDS starting using the analogous term Blue Economy to emphasize the importance of their ocean space to their development and draw attention to their extensive marine jurisdictions and economic opportunities they could provide. (It should be noted that there was disagreement among the SIDS about the benefits of using the term, with the Pacific SIDS generally in favor and SIDS in other regions generally more ambivalent.)
- And 'Blue Growth'? In our readings, we found that many groups use the terms Blue Economy and Blue Growth relatively interchangeably (as presumably most people are in favor of the sustainable growth of an economy). Blue Economy seems to have gained transcendence in the policy realm, however, as the term Blue Growth may have a slightly greater association with the pursuit of unsustainable development of the ocean economy (examples here and here).

Most importantly, what does a Blue Economy look like in action? Why are people so excited about this?

- Because there are so many different ideas of what Blue Economy is, there will obviously be many different ideas about what Blue Economy will look like in action. In fact, it is difficult to find ocean development activities that are NOT being billed as Blue Economy activities.
- To give a flavor for this, one just needs to look at the commitments from the massive Sustainable Blue Economy Conference held in Nairobi, Kenya, this past November with over 18,000 participants from 184 countries; seven heads of state or government; 84 ministers; and leaders from government, scientific, and business spheres. Commitments include:
 - Somalia: To improve regulation of offshore activities such as piracy
 - Uganda: To register all boats to decrease IUU fishing and to prohibit cultivation on hills sloping more than 30 degrees to prevent landslides
 - Cook Islands: To have 100% renewable energy by 2020
 - Palau: To protect 80% of its EEZ from fishing and allow only local fishing operations in the fishable area
 - Tuvalu: To enhance the country's ocean fisheries certification system
 - Mozambique: To restore mangrove forest to 5,000 hectares by 2023
 - Bahamas: To ban single-use plastic bags, straws, and cans by 2020
 - Autonomous Region of Sao Tome and Principe: To make tourism sustainable and plastic-free
 - Ireland: To purchase aircraft to increase patrolling capability to protect fisheries
 - Kenya: To aggressively combat IUU fishing
 - Multi-country: To support aquaculture value chains in African countries
 - India: To invest in port-led development projects
 - Namibia: To desalinate sea water for agriculture, domestic and industrial use
 - Kenya: To partner with global shipping lines
 - Timor Leste: To protect fragile areas from fishing poachers
 - African Union: To help African countries build capacity to exploit the deep sea.

A comprehensive listing of country commitments can be found here.

- Other examples of initiatives along the lines of the four conceptualizations (above) include:
 - Oceans as good business:
 - South Africa's Operation Phakisa hopes to add one million new jobs in the country's shipping, aquaculture, and oil and gas sectors as well as establish new MPAs.
 - The European Commission is developing Blue Growth strategies, including governance approaches and financing, to promote the growth of key marine sectors such as aquaculture, coastal tourism, marine biotechnology, ocean energy, and seabed mining.
 - Oceans as a driver of innovation
 - Seychelles is undertaking a number of Blue Economy activities financed in part by innovative schemes such as debt-for-conservation-adaptation-and-spatial-planning swap and issuance of the world's first Blue Bond.
 - In the Caribbean, Grenada is also initiating a host of Blue Economy activities including developing innovative sustainable financing mechanisms for coastal

and marine resource protection, developing coastal and marine spatial plans, and participating in regional innovation technology challenges.

- Oceans as livelihoods
 - Pacific Island nations like the Solomon Islands are looking at improving product storage and sanitation conditions in fish markets to improve the quality of fish sold and increase economic returns from fishing and fish processing. [It should be noted, however, that past donations of ice machines have not always been successful at improving the quality of fish sold because of problems with provisioning, servicing, and managing the ice machines.]
- This last point brings up a very critical aspect of the Blue Economy into which the literature does not delve very deeply – namely, the need to consider enabling conditions for the success of Blue Economy activities. In particular, good governance is critical to the success of many if not all Blue Economy activities. In many regions, however, governance agencies do not have the capacity to manage the areas they are responsible for, corruption is a significant problem, and/or significant policy interventions would be needed to achieve envisioned Blue Economy benefits.
- What does Blue Economy success actually look like on the ground/in the water? As with conceptualizations and implementation of Blue Economy, what success looks like will vary widely. The recency of the movement means that most successes are still process implementation steps rather than the societal and environmental outcomes. However, a few examples of the sorts of 'win-wins' that Blue Economy is looking for include:
 - A regional agreement on tuna catch (the Nauru Agreement Concerning Cooperation in the Management of Fisheries of Common Interest) has enabled Marine Stewardship Council certification of two Solomon Islands tuna fisheries and led to a 600% increase in revenues in recent years. Increased revenues are allowing tuna employers in the Solomon Islands to commit to providing housing and health care for workers.
 - Fishermen in Uganda are now selling fish parts (heads, bones, and organs) that used to be discarded to processors who dry them and grind them into a powder. This powder can be added to foods to provide calcium and other nutrients.
 - In southwestern Madagascar, the implementation of temporary closures for octopus fishing grounds has dramatically increased the size and value of catches.

So that sounds great! Why does all the talk of Blue Economy have some people worried?

- For many groups, there is concern that associating economic growth/development with the oceans will lead to further unsustainable ocean use, environmental degradation, and social inequality. For example, in the Maldives, land reclamation work to attract more high-end beach tourism is destroying coral reefs and replacing seagrass beds with artificial seawalls that will increase beach erosion. (Read more about concerns with reclamation projects in the Maldives and elsewhere)
- In some cases, unsustainable and/or inequitable actions may be undertaken knowingly and purposefully, and potentially unethically. One possible example of this is a recent agreement between a little-known Malagasy association and a group of Chinese companies to allow 330 Chinese fishing vessels to fish in Malagasy waters – an agreement reportedly made with no public consultation or environmental impact assessment – to promote the nation's Blue Economy.
- In other cases, even well-intentioned policies (e.g., environmentally sustainable ventures, blue carbon projects, conservation projects) may have substantial adverse effects on the environment and society. Even with the best intentions and improved technology, it may not be possible to support a broad array of increases in marine uses (e.g., offshore renewable energy, port development, shipping, tourism, aquaculture, and fisheries) while restoring or maintaining ecosystem health and function.
- In addition for cases where uses compete for space or resources, many fear that the 'little guys' – often small-scale, historic users who are less politically powerful – will lose control of or access to a marine space or resource that they used previously (sometimes referred to as 'ocean grabbing'). For example, there are concerns about these sorts of losses along the African coast where fishing communities fear for their very existence as a result of Blue Economy drives to ramp up tourism, commercial fishing, seabed mining, and oil and gas extraction. As a recent Reuter's news article describes, much of the land along the African coast is untitled and could be illegally acquired by private corporations and wealthy individuals, forcing current coastal residents to migrate or lose access to resources they currently use. In addition, increased tourism along the coast could lead to increased pollution and competition for resources such as freshwater. Moreover, coastal fish stocks are dwindling due to increased fishing pressure including from foreign industrial vessels, and seismic exploration for minerals and oil and gas along the coast has driven fish stocks farther offshore, making them harder and more expensive for small-scale fishers to access.
- Another concern that frequently arises with the Blue Economy movement is that there will be too much emphasis on market use values and too little on non-market values. The traditional metric for measuring annual growth for a nation's economy is change in Gross Domestic Product (GDP). However, this measure does not generally capture growth or loss of natural capital such as coral reefs, wetlands, water, or minerals, including losses due to the unsustainable use or degradation of these resources. For instance, it is estimated that current rates of mangrove loss will cost Southeast Asia US\$2.2 billion in foregone benefits (coastal protection and fisheries habitat) annually by 2050. Likewise, it is estimated that current rates of coral reef loss in the region will cost the region US\$5.6 billion in lost fisheries value annually by 2050. New metrics (e.g., the UN's System of Environmental and Economic Accounting) are needed to capture this information and provide a better assessment of the sustainability of an economy, although data gaps make these more inclusive metrics difficult to use.

And, finally, let's look at a few more interesting perspectives on the Blue Economy and fishing

- To wrap up, let's focus on fisheries for a bit. While the total economic value of ocean fishing is small compared to other industries such as oil and gas, shipping, and tourism, it is hard to overstate its importance for food security and employment, particularly in SIDS and developing coastal nations. In Pacific Island countries, fish constitute 50-90% of animal protein intake, artisanal fishing is the primary or secondary source of income for up to half of households and revenues from national fisheries often comprise a significant percentage of a country's GDP.
- With 90% of the world's fisheries fully exploited or over exploited it can be difficult to see this sector as a growth area for the Blue Economy. But many researchers and policymakers do see ways forward.
- At one end of the spectrum is the view that the best way for fisheries to be part of a Blue Economy (in keeping with the 'oceans as a source of livelihoods and development opportunities' conceptualization of the Blue Economy) is to substantially reduce (even to the point of eliminating) industrial fisheries in favor of small-scale fisheries (e.g., artisanal, subsistence, and recreational fishing) [3]. According to a leading fisheries expert Daniel Pauly, a professor at the Institute for the Oceans and Fisheries at the University of British Columbia, this would promote Blue Economy because:
 - Subsistence fishers would be better able to meet the consumption needs of their families and local communities because of decreased competition with industrial fleets
 - Habitat destruction by industrial trawlers would be eliminated
 - Small-scale fisheries generally use less fuel and are more selective
 - An increased percentage of catch would go directly to human consumption, increase its caloric efficiency (~25% of industrial fisheries catch goes to fish meal and animal feed)
 - Recreational fisheries can be an incredibly valuable source of foreign income for developing nations because fish caught by tourists are worth many times what they are worth when caught in a commercial fishery.

According to Pauly, this reduction in industrial fishing could be achieved largely by phasing out government subsidies to industrial fishing. Globally, governments provide ~ US\$35 billion in subsidies to industrial fisheries annually (relative to a global ex-vessel value of their catch of US\$140 billion). In addition, illegal fishing and inhumane working conditions constitute an additional 'subsidy' to industrial fleets. Pauly does not, however, present a rigorous analysis of possible socioeconomic impacts of measures to reduce levels of industrial fishing (e.g., less foreign capital from leasing fishing rights flowing into SIDS).

- Another take on how developed country fisheries that are near or at capacity can participate in the Blue Economy is by adding value to the fisheries. One way that this can be done in some areas is through certifications such as the Marine Stewardship Council sustainability certification or the EU Protected Designation of Origin Certification. These ecolabels enable products to command a higher price. Other means of adding value to a near- or at-capacity fishery is by developing technology to use fishing resources more efficiently and upgrading fish as a commodity. Examples of this include scoping fishing areas prior to fishing to ensure that catch per unit

effort will be high and freezing catch so that it can be stored and only sold when market prices are highest.

- And yet another view of how capture fisheries can participate in the Blue Economy is through improved fisheries management. A reexamination of stock assessments and statistical models for a large number of global fish stocks (4,713 stocks comprising 78% of global fisheries) estimated that with improved fisheries management there is significant potential for increasing profit in global fisheries and some potential for increasing yields in some fish stocks. They suggested that increases could come from rebuilding overfished stocks (particularly in Asia) and fishing some lightly-fished stocks harder (particularly in North America and Europe). These estimates are based on the assumptions that there are no interactions between different stocks and that management can target maximum sustainable yields or profit-maximizing catch levels precisely. In addition, these changes in fisheries management would have: 1) ecosystem impacts because some of additional yield would come from harvesting lower trophic levels and 2) employment impacts because rebuilding overfished stocks in Asia would require decreasing fishing effort.
- Finally, in keeping with the idea that technology innovation can lead to economic development while also protecting natural resources, many Blue Economy initiatives for fisheries are aimed at: 1) reducing IUU fishing through increased surveillance and enforcement and 2) improving fishing gear to reduce bycatch and prevent damage to vulnerable habitats.

[1] For instance, calculations of the value of the EU Blue Economy show: 1) the importance of ocean-dependent and ocean-related sectors in general (5.4 million jobs, gross value of nearly €500 billion annually) and 2) the importance of certain industries (e.g., coastal and marine tourism, marine transport, and energy) relative to others that have traditionally received more attention (e.g., fishing).

[2] A 2016 article by Maria Corazon M. Ebarvia provides a relatively comprehensive look at the sectors that a Blue Economy could encompass:

“First, the blue economy encompasses all economic activities with a direct dependence on the ocean or coastal and marine resources. These include economic activities that are (a) ocean-based, and (b) ocean-related. Ocean-based activities include those that are undertaken in the ocean (e.g., fisheries and aquaculture, offshore oil and gas, mining, ocean energy, desalination, shipping/marine transportation, marine tourism, marine construction). Ocean related activities use products from the ocean (e.g., seafood processing, marine biotechnology, chemicals, salt, etc.); and produce products and services for the ocean and ocean-based activities (e.g., ship building and repair, ports, tourist resorts, communication, maritime insurance and law, maritime technical services, etc.).

Second, the blue economy also includes marine education and research as well as activities of the public sector agencies with direct coastal and ocean responsibilities (e.g., national defense, coast guard, marine environmental protection, etc.).

Third, the ocean generates economic values that are not usually quantified, such as habitat for fish and marine life, carbon sequestration, shoreline protection, waste recycling and storing, and ocean processes that influence climate and biodiversity.

Fourth, new activities are also evolving over the recent years, such as desalination, marine biotechnologies, ocean energy, and seabed mining. There are also innovations in activities that aim to protect ocean health, such as ballast water and invasive species management, waste-to-energy, wastewater treatment systems with low footprint, etc. These activities have to be included and measured in the ocean economy accounts. Ecotourism, eco-ports, and eco-ships aim to make these industries more environmentally sound, while ocean energy offers low carbon and renewable energy source. These innovations and emerging markets offer opportunities for investments and business, further contributing to blue economy development.”

[3] This approach would still require regulating fisheries catches to ensure they were at sustainable levels.

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