WWF

REPORT

2015

ALL HANDS ON DECK

SETTING COURSE TOWARDS A SUSTAINABLE BLUE ECONOMY

IT IS TIME FOR "ALL HANDS ON DECK"

This report is an invitation from WWF to all actors in the Baltic Sea Region — in government, civil society, and the private sector — to raise the bar on our collective ambitions.

We all know that the Baltic Sea is in trouble. We know that current actions to restore the sea to good environmental health are still not adequate to achieve this goal. At the same time, we also know that the Baltic Sea is seriously under-performing as an economic resource. **As a region, we risk missing out on hundreds of thousands of new jobs and billions in future revenue if we do not take decisive action now to protect and restore the sea's ecosystems, and to use its resources and potential sustainably.**

If we are to save our sea and build a prosperous economy in our region for the long term, we will need a new approach. This report maps a way forward. It introduces the concept of "Blue Economy" — now spreading rapidly throughout the world — and describes how a sustainable Blue Economy can flourish in the Baltic Sea Region. It presents a set of Principles for a Sustainable Blue Economy to guide development, and it assesses our region's current status and trajectory relative to these Principles. The report looks at our sea's economic and environmental situation through the lens of a "SWOT" analysis — strengths, weaknesses, opportunities and threats — that is based on the Principles, and it proposes a set of action steps to realize this singular opportunity: the chance to create a global model of prosperity and environmental stewardship in the Baltic Sea region's maritime economy.

Photo: Pureline / Nordicphotos

"As a region, we risk missing out on hundreds of thousands of new jobs and billions in future revenue if we do not take decisive action now to protect and restore the sea's ecosystems."

Key messages presented in this report include:

- **A healthy sea is vital to a healthy economy.** We need to begin seeing the Baltic Sea as an irreplaceable and uniquely valuable natural and economic asset. Restoring the sea to health should be seen not as an "environmental cost," but as a long-term investment in our region's economic future — an investment that will create jobs, income, and global export opportunities for regional companies.

- **We need to set more ambitious goals that work together to create a circular economy, with zero negative impact on the Baltic Sea, and monitor our progress towards achieving them**. While we urgently need to implement existing marine policies, goals and targets, we also need to raise the bar, aiming for long-term economic prosperity through efficient management of natural resources and zero negative impact on the Baltic Sea. Without a shared sense of long-term vision based on sound scientific knowledge, and a strong commitment to achieving that vision, we will be rudderless.

- **The Baltic Sea Region has the potential to be not just prosperous and "green", but also a global role model and agent of change.** We can create a truly efficient, productive, and circular economy by aiming for zero negative impact on the Baltic Sea environment. The more we succeed, the more we stimulate others around the world to follow our example.

- **The Principles for a Sustainable Blue Economy presented in this report can help guide the Baltic Sea region to the achievement of this goal.** These new Principles are universal. They describe a destination and map a pathway that can guide decision-making and action in government, companies, private investment, and civil society, so that we can set our course accurately, and evaluate our progress appropriately.

WE MUST CHANGE COURSE

OUR SHIP IS IN ROUGH WATER

- **An analysis based on the Principles shows that the Baltic Sea Region is far from a sustainable Blue Economy today — but we have ample opportunities and strengths to build on.** We need stronger, more proactive leadership to move the region more quickly in the right direction. We face many challenges, but we have the knowledge we need, we have many of the public policies already in place, and we have solid business opportunities on which to capitalize. We can do it.

- **To accomplish all of this, we need actors in the public, private, and civil sectors to pull together and act now.** First we need to set ambitious goals and targets that aim for a truly circular economy, with zero negative impact on the Baltic Sea, and follow up on them. But a sustainable Blue Economy also needs adequate rules and economic incentives, truly integrated maritime policies, and maritime spatial planning that fully applies the ecosystem-based approach. The private sector must take on a global leadership role and show the way by implementing a circular economy along and across their value chains. Public and private investment flows should be directed to support these fore-runners.

Without these actions, we risk losing our most precious shared asset, and our hope for a prosperous maritime future in our region. **Our ship is in rough water and we need to change course. It's time for "all hands on deck."**

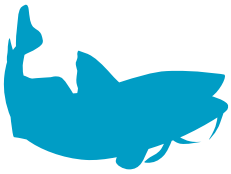
LIST OF ACRONYMS

BACC	Baltic Assessment of Climate Change
BALTEX	Baltic Sea Experiment (changed to: Baltic Earth)
BSR	Baltic Sea Region
BSSSC	Baltic Sea Subregional Co-operation
CAP	Common Agricultural Policy
CFP	Common Fisheries Policy
CSR	Corporate Social Sustainability
EC	European Commission
EIA	US Energy Information Administration
EU	European Union
EUSBSR	EU Strategy for the Baltic Sea Region
FAO	Food and Agriculture Organization of the United Nations
GDP	Gross Domestic Product
GRI	Global Reporting Initiative
HELCOM	Baltic Marine Environment Protection Commission – Helsinki Commission
IMO	International Maritime Organization
IMP	Integrated Maritime Policy
MSFD	Marine Strategy Framework Directive
MSP	Maritime Spatial Planning
SWOT	Strengths, Weaknesses, Opportunities, Threats (analysis)
OECD	The Organisation for Economic Co-operation and Development
PSSA	Particularly Sensitive Sea Area
UBC	Union of the Baltic Cities
UN	United Nations
UNPRI	UN Principles for Responsible Investments
UNWTO	UN World Tourism Organization
VASAB	Vision and Strategies Around the Baltic
WFD	Water Framework Directive
WWF	The World Wide Fund for Nature
ZNI	Zero Negative Impact

Photo: Dudarev Mikhail / Shutterstock

THE RISE OF THE BLUE ECONOMY

All around the world, in nearly every nation with a coastline, people and governments are talking about the "Blue Economy": using the sea's resources to fuel economic growth and increase prosperity.



2.5 TRILLION DOLLARS

IS THE ESTIMATED ANNUAL ECONOMIC OUTPUT FROM THE SEA

The idea of using the sea for economic gain is hardly new, but the recently introduced concept of the Blue Economy aims to scale up this ancient human practice dramatically, using the latest technologies, powered by the dynamic forces of the market, and steered by new, enabling public policies. The intent of the Blue Economy is to create as much economic value from the marine environment as possible, but to do it in a sustainable way that preserves and protects the sea's resources and ecosystems. If the Blue Economy movement succeeds, it will amount to nothing less than a radical re-shaping of humanity's relationship with the sea.

That relationship is already critically important to the wellbeing of billions of people, who depend on the sea for food, transportation, jobs, resources, and recreation. Recent studies estimate the annual economic output from the sea at more than 2.5 trillion dollars. If the global economy had a balance sheet and the oceans and seas were listed as an asset, the calculated worth of that asset would be at least 24 trillion dollars[1].

These numbers mainly reflect traditional "economic" measures of value: monetized resources and production processes, leading to goods and services sold on the global market. But of course the value of the seas and oceans extends much farther than that, to include uncounted (and uncountable) social benefits as well as the simple right of ecosystems to exist. No one can put a price tag on the magnificence of the sea.

Table 1: Global economic output of the World's oceans and seas, per year

TYPE OF OUTPUT	BILLION US$
Direct output (fishing, aquaculture, etc.)	400 - 420
Services (tourism, education etc.)	365 - 400
Trade and transportation (shipping)	700 - 750
Adjacent benefits (carbon sequestration, biotechnology etc.)	890 – 1,000
Other intangible benefits*	nonquantifiable
TOTAL	**US$2.4 – 2.6 TN**

* "Intangible benefits" includes, for example, oxygen production and global temperature stabilization, as well as spiritual and cultural values.

Source: "Restoring the Ocean Economy – Action Agenda 2015," WWF

Europe is gearing up to turn its regional seas into ever-larger engines of commerce.

Nonetheless, economic numbers like these begin to explain why the idea of the Blue Economy has rapidly become a global phenomenon. Here in the Baltic the phrase used is "Blue Growth," following the policy language introduced by the European Commission in recent years. Europe is gearing up to turn its regional seas into ever-larger engines of commerce, aiming to capitalize on under-utilized resources and spurring faster growth in the marine and maritime sectors that are, in many cases, already expanding rapidly. But it also aims to achieve Blue Growth sustainably, meaning in ways that preserve and protect those resources for future generations.

To understand why the Blue Economy and Blue Growth have attracted so much regional interest, let's start by looking at some global numbers.

[1] *Restoring the Ocean Economy – Action Agenda 2015, WWF*

BLUE, GREEN, AND CIRCULAR ECONOMY

The phrase "Blue Economy" is one of a family of concepts that also includes "Green Economy" and "circular economy." Why do these different concepts exist? And what is "different" about them?

The phrase "Green Economy" came first, and it was one of the formal focus areas of the 2012 United Nations summit on sustainable development in Rio de Janeiro ("Rio+20"). But maritime nations attending that conference, and especially the small island states, felt that the Green Economy agenda was too focused on land-based processes, and did not adequately address their fundamental dependence on the sea. They introduced the parallel concept of Blue Economy, focusing on the development of the oceans as an economic resource (with the word "sustainable" almost always added to the policy language). The term has since spread to nearly every country with a significant maritime economy.

Meanwhile, the idea of a "circular economy" is more general, and refers to industrial processes that use resources in cycles, so that every "waste" product becomes an input to another industrial process, creating no net loss of resources, and no pollution.

To be truly sustainable, any economic system — whether it is "Green" or "Blue" needs to be circular.

Scaling Up the Blue Economy

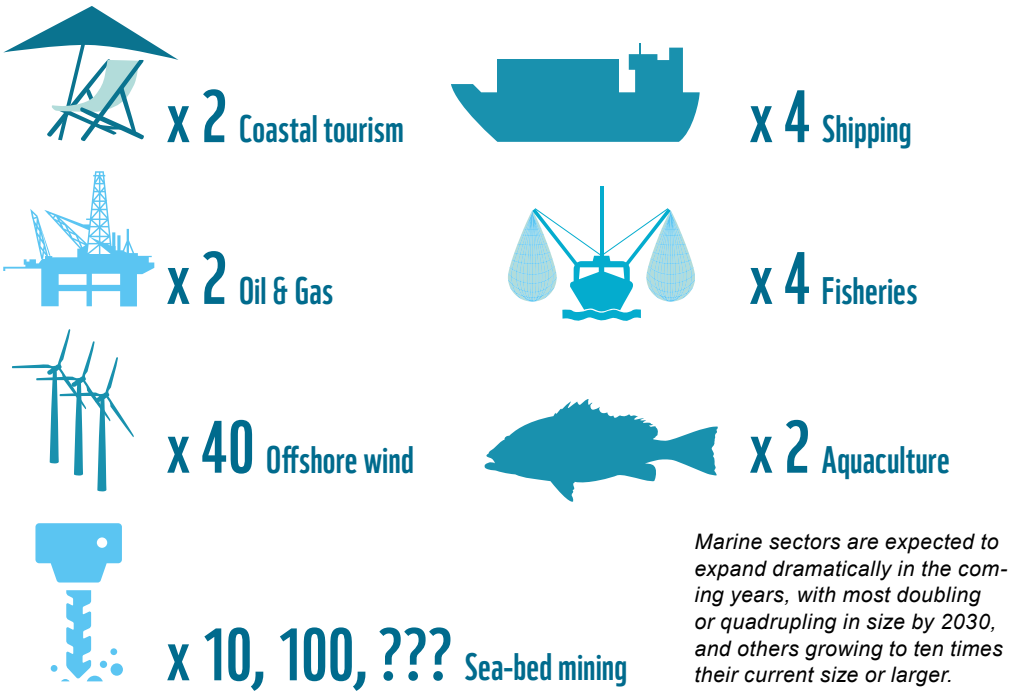
In 2012, propelled by a UN global conference on sustainable development (the conference now known as "Rio+20"), the phrases "Blue Economy" and "Blue Growth" began to get noticed in international language of policy, and to be used alongside parallel concepts such as "Green Economy" and "circular economy" (see Box 1: "Blue, Green, and Circular Economy"). Since then, these phrases have surged into common usage around the world. Within three years, 90% of the nations of the world that have a coast were already involved with some form of Blue Economy declaration, program, or formal policy initiative, and many were beginning to invest in it.[2]

This rapid adoption of the Blue Economy concept can be explained with a single word: scale. The oceans and seas cover 70% of our planet's surface. They already play an enormous role in the global economy, but as land-based resources become more scarce, the oceans look ever more attractive. Within their waters, under their floors, and even in the winds that blow over them, many nations see vast amounts of economic value still to be harvested. It is this growing realization of the untapped economic potential of the sea that is driving the exploding number of conferences, official declarations, regional initiatives, and funded aid programs that have the "Blue Economy" concept at their core. The amount of attention now being paid to the sea, together with the amount of investment money being mobilized to tap into its resources globally, has caused some commentators to begin calling this phenomenon a "blue gold rush."

This increased economic focus on the seas has emerged in parallel with the existing growth in the marine and maritime economic sectors. Global tourism (of which about 80% is linked to the coasts and seas), marine aquaculture, shipping, and offshore fossil fuel extraction are already expected to roughly double, or in some cases even triple, between now and 2030. Other sectors, such as offshore wind, seabed mining, and biotechnology, are comparatively small today — but their high growth rates mean that over two decades, they will quickly become many times larger than they are now.

[2] *Internal WWF study, True Blue: The Strategic Meaning of Blue Economy, 2014*

Estimated Global Blue Growth until 2030



Marine sectors are expected to expand dramatically in the coming years, with most doubling or quadrupling in size by 2030, and others growing to ten times their current size or larger.

Sources: Strategic Transport Infrastructure Needs to 2030, OECD, 2012; Tourism Towards 2030, UNWTO, 2011, Douglas-Westwood, 2013; FAO; Blue Growth – opportunities from the marine and maritime sustainable growth, EC, 2012; Renewable Energy Outlook 2013; EIA; Marine Biotechnology, Enabling Solutions for Ocean Productivity and Sustainability, OECD, 2013."

This kind of potential for rapid scaling up raises hopes, for many, in an increased prosperity that can create many jobs and help to achieve the global dream of eliminating poverty. For others, however, growth like this raises worries: how can we restore the oceans and seas to health, while also using them more and more intensively?

If there is one global region with an excellent chance of solving this puzzle and creating a sustainable Blue Economy, it is Europe, which has a history of global leadership on many issues related to sustainable development. But in the case of the Blue Economy, the challenge to Europe is large and, of course, growing.

Europe's Quest for Blue Growth

"Europe's seas are increasingly looked upon as sources of natural resources that can fuel the continent's economic development."

For years, Europe has been famously struggling to pull its economy out of the slump that arrived with the financial crisis of 2008. The new administration of the European Commission has made economic growth an even higher priority than the previous one, as reflected in a new investment plan to pump 315 billion Euros into Europe's real economy in order to create jobs and stimulate growth over the next five years.[3]

How much of that money is likely to find its way to the Baltic Sea? That is still unclear, but what is clear is that the Blue Economy — which already generates a gross added value of almost €500 billion a year and employs more than six million people in Europe[4] — is seen as a major contributor to the expected new growth. Europe's seas are increasingly looked upon as sources of natural resources that can fuel the continent's economic development, and decrease its dependency on imports. You can see this perspective reflected strongly in the EU's "Blue Growth Strategy", which is considered as part of the overarching Europe 2020: A strategy for smart, sustainable and inclusive growth. (The Blue Growth Strategy is also one of the pillars of the EU's Integrated Maritime Policy, which aims for the balanced use of regional seas. See Box 2 for an orientation to relevant EU and regional policy.)

It is difficult to know what percentage of EU investment in the region will be earmarked for the development of the Blue Economy, but one telling indicator is the high priority given to Blue Growth in the new Horizon 2020 research programme: €145 million is allocated to Blue Growth in 2014–2015 alone, together with additional funding opportunities potentially linked to maritime issues across the rest of the research budget.[5] Where is this money, as well as other regional development funds, likely to go? One can assume that it will be disbursed roughly in alignment with the five key target sectors in Europe's Blue Growth strategy: aquaculture, coastal tourism, ocean energy, biotechnology and seabed mining. These are the marine and maritime businesses on which Europe is currently betting.

The Spread of "Blue" around the Baltic Sea

If we step down in scale from the EU as a whole to the Baltic Sea region, the push for Blue Growth focuses on a slightly different mix of sectors. Here, short sea shipping (that is, cargo shipments between EU ports as well as between EU and neighbouring countries), coastal and cruise tourism, offshore wind, shipbuilding, aquaculture and blue biotechnologies are seen as the most promising marine and maritime sectors.[6] Some of these sectors are quite small today, employing only a few thousand people; but they have attracted attention because their recent growth rates are above average in the EU. Offshore wind, aquaculture and cruise tourism grew by 20%, 13% and 11% respectively between 2008 and 2010 — a period that was otherwise marked by economic recession.[7]

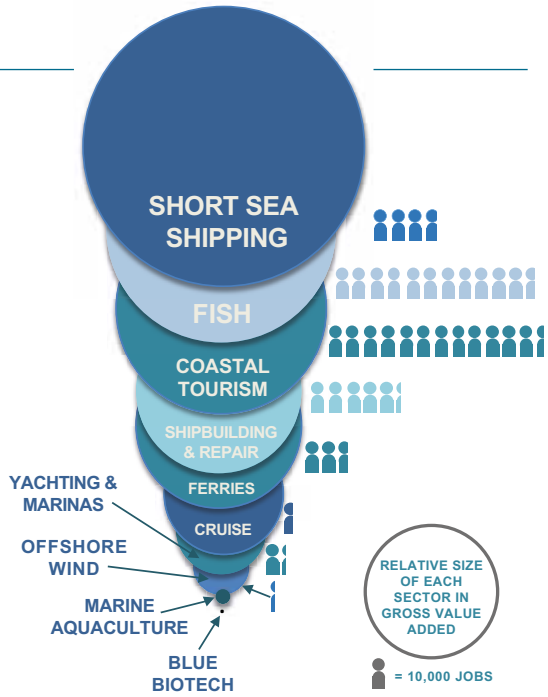
Further development and growth of these sectors is, as a consequence, an integral part of the "EU Strategy for the Baltic Sea Region" ("EUSBSR"). This strategy also places strong emphasis on sustainability and the ecosystem-based approach to integrated management, which is a very promising foundation on which to build regional policy and action.

[3] *http://europa.eu/rapid/press-release_MEMO-14-2704_en.htm*
[4] *State of Europe's seas, European Environment Agency, Report No 2, 2015*
[5] *Ocean Research in Horizon 2020: The Blue Growth Potential, Directorate-General for Internal Policies, 2015*
[6] *http://ec.europa.eu/information_society/newsroom/cf/mare/itemdetail.cfm?item_id=16493*
[7] *This according to the Study on Blue Growth, Maritime Policy and EU Strategy for the Baltic Sea Region carried out in 2013.*

Coastal tourism provides by far the largest number of jobs of all marine-based sectors.

Table 2: Economic size of marine and maritime sectors in the Baltic Sea (excluding Russia)

MARINE SECTOR	GROSS VALUE ADDED € BILLION	EMPLOYMENT (JOBS)
Coastal tourism	3.1	127 000
Fish for human consumption*	3.8	117 000
Shipbuilding and repair	2.0	51 000
Short sea shipping**	5.7	39 000
Passenger ferry services	2.0	26 000
Cruise tourism	1.0	5 200
Yachting and marinas	0,6	12 000
Offshore wind	0,2	2 000
Marine aquaculture	0,02	700
Blue biotechnology	N/A	N/A



Source: Study on Blue Growth, Maritime Policy and EU Strategy for the Baltic Sea Region (2013)

* More that 70% in fish processing and retail.

** "Short sea shipping" is defined by the EU as "Movement of people or cargo between European ports or between those ports and ports situated in non European countries having a coastline on the enclosed seas bordering Europe."

Almost 70 of species in the Baltic Sea are in danger of becoming extinct. This is an alarmingly high figure, especially for our uniquely brackish sea.

4% of species (marine mammals, fish, birds, aquatic plants and benthic invertebrates) in the Baltic Sea are in danger of becoming extinct. This is an alarmingly high figure, especially for our uniquely brackish sea. (HELCOM Red List of Baltic Sea species in danger of becoming extinct (2013).

The push for Blue Growth by national governments

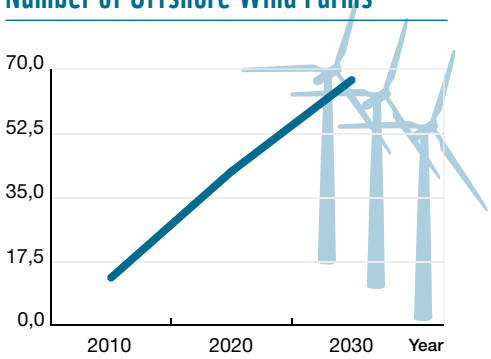
If we step down again to the national level, countries such as Denmark, Germany, Poland and Sweden are actively working to incorporate the EU push for Blue Growth into their maritime strategies, while in Estonia, Latvia, and Lithuania, "Blue Growth" (at least as framed and promoted by the EU) has not really made it to the national policy agenda. In Finland there is a specific policy commitment to developing the country's so called "blue bioeconomy" — that is, the part of the Blue Economy that is based on marine biological resources.

Whether or not growth of the marine and maritime sectors is called "Blue", or is catalysed by the EU Blue Growth agenda, all countries have strategies in place to further develop and grow specific marine-based sectors.[8] A study commissioned by the European Commission[9] provides an indication of which sectors the countries may prioritise in the future. In this study, nearly all EU countries in the Baltic Sea region identified coastal tourism and short sea shipping among the most relevant and promising marine-based economic activities to be targeted for growth. Denmark, Germany, Poland and Sweden also included offshore wind on this list, while the three Baltic States added fish for human consumption, referring to the potential of growing the fish processing industry. Aquaculture was pointed out by Denmark, Sweden and Poland. Like many of the other countries in the region, Russia is targeting shipping (including port capacity) for growth, as well as offshore wind and aquaculture.

[8] *For more information on each country's Blue Economy policy and planning, see the Technical Annex to this report at the http://panda.org/baltic website.*

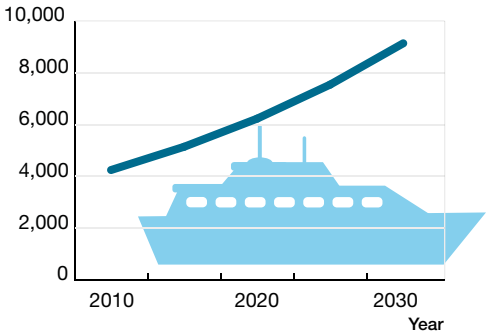
[9] *Study on Blue Growth, Maritime Policy and EU Strategy for the Baltic Sea Region, Final Report and Country Fiches, December 2013 (report commissioned by the EU Commission)*

Number of Offshore Wind Farms



Number of offshore wind farms in the Baltic Sea 2010–2030

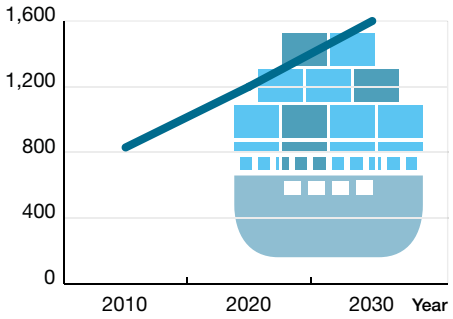
Number of Ships per Month



Predicted increase in the number of ships per month on the Baltic Sea 2010–2030

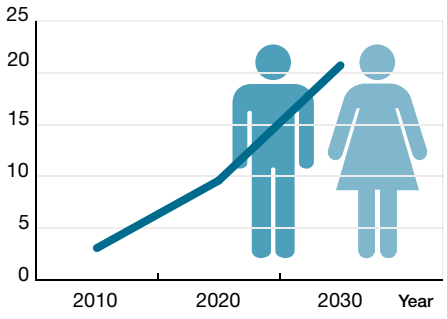
"The number of ships on the sea, as well as the cargo weight managed by Baltic Sea ports, is likely to double between 2010 and 2030. During the same time period, the number of wind farms could quadruple, and the number of cruise passengers increase by a whopping 600%."

Cargo (million tonnes)



Predicted amount of cargo managed by Baltic Sea ports 2010–2030

Passengers (million)



Scenario for the increase in cruise passengers in the Baltic Sea 2010–2030. Cruise tourism has been increasing by about 12% per year in the region between 2000 and 2010.

Figures displayed above are sourced from "Future Trends in the Baltic Sea," WWF Baltic Ecoregion Programme, 2010

Blue Growth is already happening in the Baltic Sea Region

As in the rest of the world, all this interest in growing the Blue Economy in the Baltic Sea Region is coming in play at a moment when many of the region's marine-based sectors are already growing at significant rates. In fact, nearly all of these industries are expected to keep growing rapidly with or without the additional policy help that the Blue Growth Strategy seeks to provide.

For example, in an earlier report, WWF presented estimates that the number of ships on the sea, as well as the cargo weight managed by Baltic Sea ports, is likely to double between 2010 and 2030. During the same time period, the number of wind farms could quadruple, and the number of cruise passengers increase by a whopping 600%.[10] All of this was projected to occur before the introduction of new Blue Growth policies.

Combine this large-scale, on-going growth with the established facts about the poor health of our marine ecosystems — as recently documented by the European Environment Agenda, in its report "State of Europe's Seas."[11] Mix in further policy incentives for growth, in a situation where the EEA says that "past, present and future pressures from human activities" are already reaching levels that threaten the sea's ability to be economically productive. Compare the result to our region's less-than-successful track record at implementing current policies designed to save the sea. Performing this analysis — as described in more detail later in this report — quickly leads to a stark conclusion: our region is not on course to achieve sustainable prosperity with healthy ecosystems. At least, not yet.

That is why we need a new set of guiding principles, and a new course of action in our region.

[10] *Future Trends in the Baltic Sea, WWF Baltic Ecoregion Program, 2010*

[11] *State of Europe's Seas, European Environment Agency, 2015. The EEA report notes that the EU is not on the path to fulfil its ambition of achieving sustainable use of its seas; although it is fully empowered to do so through the current array of policies and knowledge. See: http://www.eea.europa.eu/publications/state-of-europes-seas*

INTRODUCING THE PRINCIPLES FOR A SUSTAINABLE BLUE ECONOMY

Any effort to plan for the long-term development of an economy — whether Blue, Green, or any other colour — should begin with a central insight: no economy can sustain its prosperity if the natural resource base upon which this prosperity depends is systematically being degraded.

"Consider tourism, which currently accounts for more than half of the Blue Economy jobs in our region (not counting cruise ships): few people would want to visit a polluted sea, filled with dangerous algae, and devoid of beautiful wildlife."

Consider tourism, which currently accounts for more than half of the Blue Economy jobs in our region (not counting cruise ships): few people would want to visit a polluted sea, filled with dangerous algae, and devoid of beautiful wildlife. Without a healthy sea we would not get local fresh fish for our supermarkets. For these sectors, a healthy sea is a fundamental condition for their viability.

Of course, some sectors, notably shipping, ocean-based energy and seabed mining, actually do not require a healthy sea for their operations. They can extract value from a polluted or even dead sea as easily as from a clean, living one. But the damage to their reputations from poor environmental behaviour would ultimately impact their bottom line, so even these industries depend on keeping the Baltic Sea in good health.

"Equally significant," notes the European Union, "are the recreational, aesthetic and cultural uses we make of the seas and the ecosystem services they provide."[12] No amount of economic calculation can capture the full range of benefits we receive from the Baltic Sea — the body of water that defines this region.

For all these reasons, we need to clarify what we mean by a sustainable Blue Economy.

The European Union does formally recognise the fact that economic prosperity depends on healthy ecosystems, and its policy document stresses that Blue Growth must be sustainable.[13] The meaning of "sustainable" has even been partly specified for some marine and maritime sectors, such as "zero-waste" and "zero emissions" for maritime transport, and "maximum sustainable yield" for fishing.[14,15] But for other industrial sectors, the criteria for making them "sustainable" still needs to be articulated. More importantly, we need to be very clear about what makes a Blue Economy sustainable as a whole, taking into account the effect of all these sectors operating together, with their many interconnections and cumulative impacts, ensuring that the Blue Economy operates within the limits required to maintain healthy ecosystems.

To have a clear view of what the region is aiming for with a Sustainable Blue Economy, we need to step back and get a big-picture understanding of the whole system. We need clear definitions that can be translated into operational and measurable goals and targets, so that we can determine whether the growth strategies that are being pursued in our region are actually taking us in the right direction. We need a framework for seeking win-win solutions and making decisions about the inevitable trade-offs that will come up along the way. Without such a framework, we risk undermining the very possibility of long-term growth and development in the Baltic Sea region — and we may end up with a "Blue Economy" that is more brown than green.

To help steer marine economic development onto the right course globally, WWF has developed a set of Principles for a Sustainable Blue Economy. The Principles are also harmonized with a number of United Nations agreements that are relevant to the Blue Economy, such as the UN Convention on the Law of the Sea, the Convention on Biological Diversity, the Rio Declaration, the Global Compact (as well as other corporate sustainability

A ROAD MAP

AND A DESTINATION IS PROVIDED BY THE PRINCIPLES

guidance documents), and the UN Rio+20 outcome document The Future We Want. These Principles also draw on closely related concepts such as Green Economy and circular economy.[16]

WWF believes that these Principles can help guide development in any part of the world, and especially here in the Baltic Sea Region, in a direction that leads to healthier ecosystems, better business opportunities, and a more prosperous Blue Economy.

The Principles are universal in the sense that they are applicable to any kind of actor, including regional, national and local policy-makers, corporate businesses, and financing institutions.

The Principles for a Sustainable Blue Economy offer:

A clear definition of the benefits to society that a sustainable Blue Economy should provide, and also how actors in that economy should manage the ecosystems and natural resources upon which they depend. The definition also recognises the intrinsic value of ecosystems, that is, their right to exist, regardless of their economic importance to human society. It is important to note that the principles for managing our use of and impact on ecosystems are based on the laws of nature, which no government or market economy can renegotiate.

Guidance on governance, describing how a Sustainable Blue Economy must be steered, by public as well as by private actors, at any scale, to address uncertainties and to take into account different needs and uses of the seas.

A set of fundamental actions that need to be taken if a Sustainable Blue Economy is to materialize.

In short, the Principles provide both a destination — in the form of a set of framing conditions within which the Blue Economy must operate — and a roadmap to help us get there.

[12] Communication from the Commission - An Integrated Maritime Policy for the European Union, 2007

[13] Blue Growth – opportunities for marine and maritime sustainable growth, EU Commission, 2012

[14] Commission Communication: Strategic goals and recommendations for the EU's maritime transport policy until 2018, 2009

[15] EU Common Fisheries Policy (CFP)

[16] Note that "Green Economy" is capitalized in this report because of its frequent use in formal international policy processes, while "circular economy" is not capitalized because it is a more general descriptive term.

The Baltic Sea is the youngest sea on earth. Only a limited number of species have adapted to its brackish water. While the sea's catchment area is large, its exchange of water with the Atlantic is limited. These factors make the Baltic Sea very vulnerable to any negative human impact.

INTRODUCING THE PRINCIPLES FOR A SUSTAINABLE BLUE ECONOMY

The world's oceans, seas, and coastal areas are the largest ecosystems on the planet and a precious part of our natural heritage. They are also vital to the livelihoods and food security of billions of people around the world, and to the economic prosperity of most countries.

The ability of these marine environments to provide jobs and nutrition over the long term is, however, already under pressure from human economic activities; and it is being further threatened by development approaches that are fragmented, uncoordinated, and often in conflict with what science tells us is physically possible or ecologically sound.

Fortunately, many governments, organizations and communities in both developed and developing countries are becoming aware of the need for a more coherent, integrated, fair, and science-based approach to managing the economic development of the oceans. Humanity increasingly understands that we are an integral part of the marine ecosystem, and that we must plan and implement our economic activities with care, balancing the desire to improve human living standards and wellbeing with the imperative to sustain ecosystem health. Active leadership is needed, in both the public and private sectors, to steer the Blue Economy in a sustainable direction. This includes delivering on commitments already made – globally, regionally, nationally and locally.

To ensure that the economic development of the ocean contributes to true prosperity and resilience, today and long into the future, with special recognition of the needs of developing countries, WWF is proposing the following Principles for a Sustainable Blue Economy.

These Principles provide a definition of a Sustainable Blue Economy and a roadmap to help us get there. They are universal and can be applied to any part of the oceans, seas or coasts, as well as used by any actor involved in the economic development of the sea, including governments, private and financial sector actors, international agencies, and civil society groups.

WWF invites all Blue Economy actors to use these Principles for a Sustainable Blue Economy and to embed these definitions, descriptions, and actions into marine policy and activities, all around the world.

PRINCIPLES FOR A SUSTAINABLE BLUE ECONOMY

A SUSTAINABLE BLUE ECONOMY is a marine-based economy that ...

- **Provides social and economic benefits for current and future generations,** by contributing to food security, poverty eradication, livelihoods, income, employment, health, safety, equity, and political stability.
- **Restores, protects and maintains the diversity, productivity, resilience, core functions, and intrinsic value of marine ecosystems** – the natural capital upon which its prosperity depends.
- **Is based on clean technologies, renewable energy, and circular material flows** to secure economic and social stability over time, while keeping within the limits of one planet.

A SUSTAINABLE BLUE ECONOMY is governed by public and private processes that are ...

- **Inclusive.** A Sustainable Blue Economy is based on active and effective stakeholder engagement and participation.
- **Well-informed, precautionary and adaptive.** Decisions are based on scientifically sound information to avoid harmful effects that undermine long-term sustainability.

  When adequate information and knowledge are missing, actors take a precautionary approach, actively seek to develop such knowledge, and refrain from undertaking activities that could potentially lead to harmful effects.

  As new knowledge of risks and sustainable opportunities is gained, actors adapt their decisions and activities.

- **Accountable and transparent.** Actors take responsibility for the impacts of their activities, by taking appropriate action, as well as by being transparent about their impacts so that stakeholders are well-informed and can exert their influence.
- **Holistic, cross-sectoral and long-term.** Decisions are based on an assessment and accounting of their economic, social and environmental values, benefits and costs to society, as well as their impacts on other activities and across borders, now and in the future.
- **Innovative and proactive.** All actors in a Sustainable Blue Economy are constantly looking for the most effective and efficient ways to meet the needs of present and future generations without undermining the capacity of nature to support human economic activities and wellbeing.

To create a SUSTAINABLE BLUE ECONOMY, public and private actors must ...

- **Set clear, measurable, and internally consistent goals and targets for a Sustainable Blue Economy.** Governments, economic sectors, individual businesses and other actors must all set relevant and measurable goals and targets for a Sustainable Blue Economy to provide their planning, management and activities with a clear direction. Goals and targets for different economic, social and ecological areas – as well as related policies and activities – must be made as integrated and coherent as possible, to avoid conflicts and contradictions.
- **Assess and communicate their performance on these goals and targets.** The goals and targets for a Sustainable Blue Economy must be regularly monitored and progress communicated to all stakeholders, including the general public, in a transparent and accessible way.
- **Create a level economic and legislative playing field that provides the Blue Economy with adequate incentives and rules.** Economic instruments such as taxes, subsidies and fees should be aimed at internalizing environmental and social benefits, costs and risks to society. International and national laws and agreements, including private agreements, should be framed, implemented, enforced, and continuously improved in ways that support a Sustainable Blue Economy.
- **Plan, manage and effectively govern the use of marine space and resources, applying inclusive methods and the ecosystem approach.** All relevant uses of marine space and resources must be accounted, planned, managed and governed through forward-looking, precautionary, adaptive and integrated processes that ensure the long term health and sustainable use of the sea, while also taking into account human activities on land. Such processes must be participatory, accountable, transparent, equitable and inclusive, in order to be responsive to present and future human uses and needs, including the needs of minorities and the most vulnerable groups in society. To make informed trade-offs, such processes should also use appropriate tools and methods to capture the range of benefits that ecosystem goods and services can bring to different stakeholders.
- **Develop and apply standards, guidelines and best practices that support a Sustainable Blue Economy.** All actors — including governments, businesses, non-profit enterprises, investors and consumers — must develop or apply the global sustainability standards, guidelines, best practices, or other behaviors that are relevant to them. For organizations, application of such standards should not only ensure that their activities are conducted in a responsible way, but also improve their own performance and competitiveness, today and in the future.
- **Recognize that the maritime and land-based economies are interlinked and that many of the threats facing marine environments originate on land.** To achieve a Sustainable Blue Economy in the seas and coastal regions, land-based impacts to marine ecosystems must be addressed and actors must also work to promote the development of a sustainable green economy on land.
- **Actively cooperate, sharing information, knowledge, best practices, lessons learned, perspectives, and ideas, to realize a sustainable and prosperous future for all.** All actors in a Sustainable Blue Economy have a responsibility to participate in the process of implementation, and to reach out across national, regional, sectorial, organizational, and other borders, to ensure collective stewardship of our common marine heritage.

The net economic value for each fish caught by recreational fishermen is calculated to be about 40 times higher than a fish caught by a commercial fisherman.

A SUSTAINABILITY ANALYSIS OF THE BLUE ECONOMY IN THE BALTIC SEA

Now that we have Principles for a Sustainable Blue Economy, we need to put them to work, and take a hard look at the current Blue Economy in the Baltic Sea region. How close is the Baltic Sea region to achieving this vision? And are we headed in the right direction?

Using the Principles as our checklist and assessment tool, and considering the best available data and policy analysis (including the EU's own analyses), we asked the following questions:

- Is the Blue Economy in the Baltic performing — economically, socially and environmentally — in a sustainable way?
- Is our Blue Economy being properly governed and managed?
- Are the necessary actions being taken to take us towards our long-term vision?

Instead of presenting the outcome of this analysis principle by principle, we make use of the familiar "SWOT" format — Strengths, Weaknesses, Opportunities, and Threats. However, we have switched the order and started with the key Threats and Weaknesses affecting the realization of a sustainable Blue Economy in our region, before moving on to the Strengths, and a look ahead to our region's many Opportunities. For each identified aspect in the Threats, Weaknesses, and Strengths sections, we reference the specific Principles to which that item relates. The Opportunities, if converted into realities, will tend help improve performance on all the Principles — and strongly advance our progress towards a sustainable Blue Economy.

KEY THREATS

THREAT #1: The Baltic Sea Blue Economy is underperforming due to severe environmental stress from both land-based and sea-based human activities

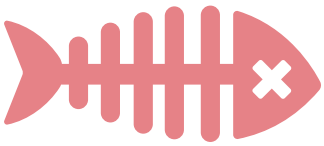
Threat 1:

Relates to the following Principles:

- Provides social and economic benefits for current and future generations
- Restores, protects and maintains the diversity, productivity, resilience, core functions, and intrinsic value of marine ecosystems

It is not news to most people that the Baltic Sea is in trouble. It is considered one of the most environmentally stressed seas in the world. Driven largely by multiple human pressures on the Baltic Sea environment — eutrophication, pollution and unsustainable fishing are the most severe — the current Baltic Blue Economy is greatly under-performing compared to its potential. The region is clearly losing out on the full benefits that the Blue Economy could bring.

Fish stocks, for example, are at roughly 30 to 40% below their historical average,[17] not to mention the fact that some of the fish caught in certain parts of the Baltic Sea is considered unfit for human consumption.[18] Another example is the economic loss linked to tourism and recreation that is directly caused by eutrophication and pollution. The full extent of these losses is essentially unknown, but in a survey carried out in 2008, several tourism operators around the Baltic Sea estimated that if the problem continues to grow, they risked losing 10-15% of their expected revenues.[19, 20]



Fish stocks are roughly 30–40% below historical average.

Although this on-going eutrophication and pollution is mainly caused by economic activities on land — from sources such as agriculture (by far the largest contributor to eutrophication), industry, energy production, traffic, sewage and waste — many of the marine-based sectors in the Baltic Sea, such as shipping, tourism and aquaculture, also contribute to this environmental decline.

The marine-based sectors, like most land-based economic activities, also depend heavily on fossil energy. Consequently their carbon emissions contribute to global warming, which is already starting to negatively affect the Baltic Sea environment. The best available assessments tell us that if human-caused global warming is left to continue on its present course, average temperatures in the Baltic Sea region might rise by as much as 4–8°C in winter and around 1.5–4°C in summer.[21]

Higher temperatures in the sea, together with increased run-off from land caused by higher rates of precipitation, will just add to the problem of eutrophication and further stress our fragile biodiversity — unless we take preventative action. Water surface temperature in the Baltic Sea could also increase by 2–4°C, spurring further algae blooms. Increased rainfall and freshwater inflow could lead to a decrease in the Baltic Sea's salinity, further stressing a delicate ecosystem.

To make matters worse, the marine and maritime sectors also contribute to physical degradation of the Baltic Sea ecosystems, through port expansions, the building of bridges and other infrastructure, expansion of tourism destinations, laying of electricity or gas cables, and digging out sand from the sea bottom. Invasive species can also get introduced into our ecosystem by ballast water. And finally, the threat of fish farms spreading diseases and genetic material to wild fish remains a concern.

The The Baltic Sea is considered one of the most polluted seas in the world. Bottom areas larger than the size of Denmark are depleted from oxygen.

[17] International Council for the Exploration of the Sea (ICES), reported in the Fisheries Secretariat "ICES Advice for the Exploitation of Baltic Sea Fish Stocks 2015," 2 June 2014.

[18] Fish such as larger salmon and herring in some parts of the Baltic Sea contain levels of dioxins and PCBs that exceed the limits set by EU. Finland, Latvia and Sweden have been granted an exception from EU rules and are allowed to sell the fish within their respective countries.

[19] Whilst the loss of tourism revenue from algal blooms is widely acknowledged, it appears to be under-researched for the Baltic as a whole. Studies are piecemeal. For example, during an algae bloom in 2005, planners on the Swedish island of Öland reported a loss of Euros 27 million for that season alone. A study conducted on the island of Gotland, on the other hand, reported that just 22% of tourism-based business reported they were affected negatively by the algae bloom (no monetary figures were reported). These indicative studies suggest clearly that more research is needed.

[20] Swedish EPA, Report 5937, 2009

[21] Second Assessment of Climate Change for the Baltic Sea Basin, BALTEX, 2015

Threat 2:

Relates to the following principle:

- Is based on clean technologies, renewable energy, and circular material flows

THREAT #2: The Baltic Sea Blue Economy, as well as the land-based economies that surround it, are based on linear material flows and non-renewable energy

A core problem is that both marine-based and land-based economic activities are mostly based on linear, and sometimes toxic, flows of materials, as well as non-renewable energy. Besides being a major cause of the above-described environmental stress to the Baltic Sea in the form of eutrophication, pollution and climate change, the linear structure of our current activities poses big questions of long-term sustainability in pure economic terms.

Consider for example phosphorous. Some researchers worry that already within two or three generations, phosphorous could become scarce, which would severely jeopardize the productivity of the agricultural sector and consequently our food security — unless we convert to more circular production processes that recapture the resource to use again. Moreover, the current linear use of phosphorous, and of nitrogen, leads to severe eutrophication of the Baltic Sea, dead sea floors and other changes in the ecosystems. Thus a shift to sustainable use of these nutrients would have multiple benefits for society.

Moreover, the unsustainable use of phosphorous leads to eutrophication, dead sea floors and ecosystem shifts, thus a sustainable use have double benefits for the society.

The economic risks associated with our dependency on fossil energy, other than the economic values that will be lost due to its impact on ecosystem productivity, are also well known: price volatility and unexpected geopolitical changes can cause many kinds of economic trouble. As the world's understanding of the impacts associated with climate change deepens, there will also be more calls to "leave the carbon in the ground" (or under the sea floor), which could have unpredictable impacts on the fossil energy market.

The threat of non-renewable and linear resource use could easily disrupt or hinder our efforts to create a truly sustainable Blue Economy.

Threat 3:

Relates to the following Principles:

- Provides social and economic benefits for current and future generations
- Restores, protects and maintains the diversity, productivity, resilience, core functions, and intrinsic value of marine ecosystems
- Is based on clean technologies, renewable energy, and circular material flows

THREAT #3: Growth of the Blue Economy risks further stressing the Baltic Sea environment, as well as increasing the competition for marine space

On top of the above catalogue of environmental damage caused by the current Blue Economy, many marine sectors are growing at significant rates, as presented earlier. This existing growth, together with any possible new growth of the kind that policy-makers are pushing for, if not pursued in a manner which ensures its sustainability, is likely to put the Baltic Sea environment in further jeopardy and therefore undermine the prospects for the Baltic Blue Economy itself. Unless we take a hard look at how our region plans, manages and assesses Blue Growth initiatives, we are not likely to get the long-term prosperity we are aiming for.

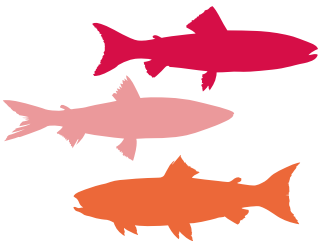
Let's take aquaculture as an example, to demonstrate the complexity of the issues that should be considered. Aquaculture is one of the fastest growing food production systems in the world and already accounts for almost half of global fish consumption. But, the rapid expansion of the aquaculture industry has not come without negative impacts, which include the risk of disease and parasite outbreaks between farmed and wild fish, pollution or depletion of local waterways, excessive use of chemicals (antibiotics, fertilizers and pesticides), habitat conversion, and potential impacts to genetic diversity of wild species from escapees.

We also know, however, that when done responsibly, aquaculture's impact on wild fish populations, marine habitats, water quality and society can be significantly and measurably reduced. So when evaluating the potential for the future growth of aquaculture in the Baltic Sea region, consideration should be given to the way in which it is pursued, with a particular focus on the potential impacts to the already severe eutrophication problem, as well as wild fish populations. If we take the issue of increasing nutrient inputs to the Baltic Sea from aquaculture, there is a clear need to monitor and work to reduce or eliminate these inputs, just as there is in the agriculture sector.

Aquaculture is one of the fastest growing food production systems in the world and already accounts for almost half of global fish consumption.

12 447 TONS OF FARMED FISH

EMPLOYED 370 IN 2012 COMPARED TO 6 754 TONS AND 439 EMPLOYEES IN 2006



Effective maritime spatial planning should also be employed as an instrument for finding suitable areas for aquaculture activities in the region, and for reducing the potential for conflicts between aquaculture and other uses, such as tourism, recreational fishing, commercial fishing, and nature protection. Worth mentioning in this context is the fact that the economic value of recreational fishing, as well as its future growth potential, is often seriously under-appreciated. As an illustration, the net economic value for each fish caught by recreational fishermen was calculated to be about 40 times higher than a fish caught by a commercial fisherman.[22]

If we turn to the employment that aquaculture is expected to bring, an interesting analysis of this has been provided by Statistics Sweden. This analysis shows that while 6,754 tons of farmed fish was produced in the country in 2006 which kept 439 people employed, by 2012, the amount of farmed fish had almost doubled to 12,447 tons — but the number of people employed had decreased to only 370 people.

The case of aquaculture demonstrates the type of complex sustainability considerations which should be included when one explores the future development potential of any Blue Economy sector. While growth in large sectors such as tourism and shipping are more likely to generate new income and job opportunities, this growth also risks adding considerable pressure on the Baltic Sea environment as well as negative impacts on other economic sectors, unless those industries undergo substantial greening of their activities.

Finally, but also very importantly, growth of the Blue Economy in the Baltic Sea is also resulting in increased competition for space among marine and maritime sectors, as well as with other interests such as nature conservation. This calls for better planning of marine space, which we will come back to further below.

Summing up these three Key Threats leads to a troubling conclusion: the Blue Economy in the Baltic Sea region is not adhering to the definition of a Sustainable Blue Economy provided by the Principles set forward in this report. In fact, it is far from performing at its full economic, social or environmental potential, and jeopardising its potential to deliver in the future. Any additional ambitions for growth need to take a much more holistic approach — especially given the threatened status of the Baltic Sea.

Why is the region heading in the wrong direction? Some of the key reasons are to be found in the Weaknesses quadrant of our SWOT Analysis, which concerns the governance and action elements of the Principles.

[22] *Swedish EPA, Report 5937, 2009*

KEY WEAKNESSES

Weakness 1:

Relates to the following Principle:

- Set clear, measurable, and internally consistent goals and targets for a Sustainable Blue Economy

WEAKNESS #1: Lack of a scientifically-based definition of a Sustainable Blue Economy that is translated into equally clear and scientifically-based goals, targets and indicators, which can in turn guide marine and maritime sector policies and decision-making

One fundamental weakness of the Blue Economy in the Baltic Sea is that there is no commonly agreed, scientifically-based definition of a Sustainable Blue Economy that can guide marine and maritime sector policies and decision-making — both in the public and private sector. As noted earlier, while the EU has identified quantitative definitions for a few Blue Economy sectors, the Baltic Sea region is still by-and-large missing a truly scientific basis for determining whether or not our policies and actions will lead to long-term sustainability. Even more troubling are the conclusions from the recent EEA report "State of Europe's Seas," which finds that while seas like the Baltic may still be productive, they are not healthy — and they are not able to withstand further stress to their ecosystems. The ability of our sea to be productive in the future "remains unclear."[23]

"The Baltic Sea region is still by-and-large missing a truly scientific basis for determining whether or not our policies and actions will lead to long-term sustainability."

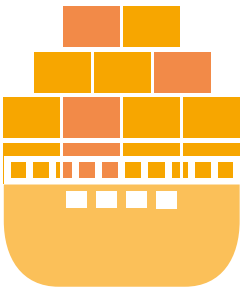
We can no longer afford to be "fuzzy" about what a Sustainable Baltic Sea Blue Economy is, if our intention is to steer towards it. We need to know for certain, sector by sector, that our economic goals, targets, and current practices will result in the economic, environmental, and social results that we want.

The Principles for a Sustainable Blue Economy provide the definitions we need, in general terms: an economy that provides social and economic benefits for current and future generations, that protects and maintains the diversity, productivity, resilience, and core ecological functions of the Baltic Sea, and that is based on clean technologies, renewable energy, and circular material flows. Now we need to turn those principles into hard numbers, formulating clear and measurable targets and indicators for each sector and for the Blue Economy as a whole, based on the best scientific information our region can muster.

Weakness 2:

Relates to the following Principles:

- Holistic, cross-sectorial and long-term governance
- Set clear, measurable, and internally consistent goals and targets for a Sustainable Blue Economy



No country in the region has a comprehensive policy that could lead to a sustainable Blue Economy. The same is unfortunately true for the Baltic Sea region as a whole.

WEAKNESS #2: Lack of holistic and cross-sectorial management of the Baltic Sea

It is a commonly recognised fact that decisions in our region are still mostly taken sector-by-sector, ministry-by-ministry, country-by-country, without a holistic, integrated approach, resulting in uncoordinated, conflicting, and inefficient and policy objectives and implementation.

Regional and national work to restore the health of the Baltic Sea still mainly involves the environmental ministries, although the necessary actions fall under the responsibilities of the sector ministries.

Recognizing the lack of a holistic approach to the management of the European Seas, the EU requested already back in 2007 that each country prepare an "Integrated Maritime Policy" (IMP) to handle synergetic and conflicting interactions between different sectors as well as their impact on the environment. The EU made recommendations about what this policy should include, but countries had a great deal of leeway in terms of how to formulate it. At present, however, not even marine environmental policies exhibit high levels of integration in the way they are implemented. According to a recent EEA assessment, environmental directives are a jumble that operate on differing timetables and scales, using different methodologies for assessment.[24]

The result is that while some countries in the Baltic Sea region have developed an IMP that covers a rather broad range of marine-based sectors, others have mainly focused their IMP on traditional maritime sectors such as shipping, shipbuilding and marine technologies — and still others have no IMP at all in place (see the Technical Annex to this report at the http://panda.org/baltic website). Although the policies that do exist refer to the Marine Strategic Framework Directive and the Baltic Sea Action Plan objective to restore the health of the Baltic Sea, these are not translated into goals, targets and indicators for the environmental performance of the sectors in the Blue Economy, other than a general call for

performance improvement. Nor have targets and indicators been set for the "Blue Economy" as a whole. Such performance targets are necessary to ensure that the growth of the Blue Economy is compatible with saving the sea.

Looking at Weaknesses #1 and #2 together, we can see that no country in the region has a comprehensive policy that could lead to a sustainable Blue Economy. The same is unfortunately true for the Baltic Sea region as a whole. The region is lacking the complete chart that it needs in order to navigate accurately toward the destination it wants to reach.

Weakness 3:

Relates to the following principle:

- Create a level economic and legislative playing field that provides the Blue Economy with adequate incentives and rules

WEAKNESS #3: Lack of a level economic and legislative playing field that provides the Blue Economy with adequate incentives and rules

Linked to the above, there are no strategies in place that effectively target a major root cause of our unsustainable practices: our region's legislative and economic playing field. The existing system of laws, policies, and regulations acts, in many instances, to steer both land- and sea-based economies away from sustainability, not towards it. As long as rules and economic incentives motivate individual actors to conduct their business in unsustainable ways, reaping the financial benefits of their actions while dumping the environmental and social costs onto everybody else, we will constantly be working against the wind.

WWF is among those who have advocated for more efficient financial mechanisms under EU's agricultural and fisheries policy for decades. While significant improvements have been made, large subsidies are still awarded to farmers and fishermen without, in many cases, effective environmental conditions attached. A prime example is the system of direct payments and the market-related support of the so-called "Pillar I" of the Common Agricultural Policy (CAP). These consist in total of 278 billion Euros, or 77% of the whole CAP, and are delivered to farmers mainly based on the area of the farm, without effective consideration for the environment.

ONLY 800 EUROS

PER DAY IS THE FINE FOR BEING CAUGHT USING "DIRTIER" FUEL IN THE BALTIC SEA

An example that concerns sea transport is the new set of rules for lower sulphur content in shipping fuel, which came into force in 2015. These new rules are very important to the achievement of Good Environmental Status in the Baltic Sea. However, the fine for being caught using "dirtier" fuel in the Baltic is only 800 Euros per day, while the potential savings to ship owners (because high-sulphur fuel is still so much cheaper) is approximately 10,000 Euros per day — and inspections are relatively rare.[25] These mixed economic signals create perverse incentives for ship owners, which raises concerns that the current situation could lead not only to a delay in the implementation of cleaner alternatives, but even to non-compliance.

One of the core ambitions of the integrated maritime strategies called for above should be to provide a level legislative and economic playing field — throughout the region, though this must ultimately extend to the rest of the world — that provides the right incentives for all actors to operate within the non-negotiable limits set by nature.

The potential savings to ship owners when using high-sulphur fuel (because it is still so much cheaper) is approximately 10,000 Euros per day.

[23] *State of Europe's Seas, EEA, 2015, p. 122*

[24] *State of Europe's Seas, EEA, 2015, p. 159*

[25] *Sulphur Directive pushes shipping into stormy waters, Euractiv, 5 March 2015*

Weakness 4:

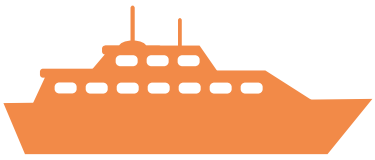
Relates to the following Principles:

- Accountable, innovative and proactive
- Develop and apply standards, guidelines and best practices that support a Sustainable Blue Economy
- Actively cooperate, sharing information, knowledge, perspectives, and ideas, to realize a sustainable and prosperous future for all

WEAKNESS #4: Lack of private sector leadership

The development of the Blue Economy is to a very large extent driven not by policy, but by private sector decisions and investments. Shifting course towards sustainability depends on the private sector's active engagement, and even leadership. Although there are encouraging signs of change in this sector (see the Strengths and Opportunities section below), best practices related to a Sustainable Blue Economy have not yet been adopted in any systematic way. Public policies and other measures proposed to tackle the Baltic Sea's challenges have often been resisted by many private sector actors, who are driven by a misperception, which is in turn encouraged by our current economic system: the idea that the costs of environmental protection and preservation will undermine economic growth.

So long as environmental impacts of all kinds generally remain excluded from the balance sheet, many business sectors will continue to have an incentive to make decisions for short-term gain at the cost of long-term prosperity. Until the market recognizes the value of a healthy Baltic Sea, they may continue to advocate for minimal constraint and reduced regulation, because of a misplaced belief that such actions are necessary for maximizing value and creating prosperity. The result of those actions is much slower progress than we need, and a sea that continues to deteriorate.



PASSENGER SHIPS

CAN STILL LEGALLY DISCHARGE SEWAGE IN THE BALTIC SEA

An example that clearly demonstrates the complexity of this issue concerns ongoing efforts to establish the Baltic Sea as a so called 'special area' for sewage from passenger ships. Special area standards would require that all sewage from such sips is either brought ashore for treatment, or effectively treated on board, using the best available technology, to ensure that nutrients are effectively reduced (resulting in at least 70% reduction in nitrogen and 80% reduction in phosphorus). Each summer, the Baltic Sea is is trafficked by around 80 different cruise ships, operated by around 40 different cruise companies, making more than 2,000 calls in Baltic Sea ports. A large number of these ships are still legally discharging their sewage into the Baltic Sea — which means that these discharges continue to contribute to the problem of eutrophication. While some ships do provide treatment prior to discharge (and some have ceased the practice of discharge voluntarily), the treatment processes used in most cases do not effectively reduce nutrient discharges in accordance with the special area standards. Meanwhile, discussions on changing the Baltic Sea's status have moved slowly, so the enormous potential for our region to develop innovative and market-leading technical solutions in this area, in both the passenger ship industry as well as the ports around the region, remains unrealized.

In yet another example of how private sector interests have sometimes resisted change, instead of leading the way, representatives of the shipping industry fought against the stricter sulphur emission rules for the Baltic Sea set up by International Maritime Organization, which were created to protect the Sea's sensitive and already stressed ecosystem. Both the shipping industry and the Baltic Sea would have been better off if that time, energy, and money had been invested in the development of new, marketing-leading solutions that created new business opportunities.

Weakness 5:

Relates to the following Principle:

- Accountable, innovative and proactive

WEAKNESS #5: Lack of accountability on policy implementation

This Weakness is closely related to one of our region's Strengths — our existing policies — which is why it makes more sense to treat it together with that Strength, in the next section.

Summing up the Weaknesses of the Baltic Sea Blue Economy, we can conclude that significant improvements are called for in the way the Blue Economy in the Baltic Sea is planned, managed, and monitored. These fundamental actions range from being clearer about where we want to go and what sustainability really means, to setting clear and relevant goals and taking the actions needed to get there. We also need the key economic actors in this region to be more proactive, and to take on a leadership role for change, instead of resisting it.

If key actors do that, then many of these Weaknesses will turn into Strengths — of which we already have many.

KEY STRENGTHS

Strength 1:

Relates to the following Principle:

- Well-informed, precautionary and adaptive

STRENGTH #1: Considerable knowledge about the Baltic Sea and about what is needed to restore it to health

The Baltic Sea is one of the most studied seas in the world. As a result, both public and private decision-makers have access to high-quality information about our sea and, very importantly, about what is needed to restore it to health. This is not to say that the region has all the information it needs to make informed decisions in all matters; but in general terms, lack of knowledge is no excuse to delay our actions to practice a precautionary approach and to restore the health of the Baltic Sea. We know far more than enough to motivate concerted action to increase the value of our most valuable natural asset.

Strength 2:

Relates to the following Principles:

- Holistic, cross-sectorial and long-term
- Set clear and measurable goals and targets (for a healthy seas rather than for a Sustainable Blue Economy)
- Plan, manage and effectively govern the use of marine space and resources, applying inclusive methods and the ecosystem approach

STRENGTH #2: Many of the necessary policies are already in place

Another key strength is that there is a good suite of public marine and maritime policies already in force here in our region. In addition to the EU's Integrated Maritime Policy (IMP) mentioned above, other key policies include the EU Marine Strategy Framework Directive (MSFD) — which builds on other important policies such as the EU Water Framework Directive and the Natura 2000 network of protected areas — and the HELCOM Baltic Sea Action Plan (BSAP). Both the MSFD and BSAP have similar goals of achieving "Good Environmental Status" in the Baltic Sea by the turn of this decade.

More recently, the EU adopted the Maritime Spatial Planning Directive, which requires countries to carefully plan the different uses of marine space, applying an ecosystem approach. If properly implemented, and if equipped with proper tools for valuating ecosystem products and services, this directive can help in promoting Good Environmental Status in the Baltic Sea, while at the same time better managing the increasing competition for marine space between the growing marine-based sectors. (For a short guide to these policies and how they relate to each other, see the box: "A Brief Guide to Marine and Maritime Policies.")

There is an important caveat here, which unfortunately takes us back into the "Weakness" quadrant for a moment, and specifically Weakness #5. While these policies are promising and full of potential, the actions to implement them are unfortunately lagging far behind. According to the European Environment Agency, "one of the biggest challenges [to the health of Europe's seas] remains the full and timely implementation of existing policy."[26] As a region, we are saying many of the right things, but we are not yet doing them. Even the EU's own assessment of the implementation of its MSFD comes to this conclusion, noting that coordinated efforts to achieve the policy goals set by the region are largely lacking, and that countries need to step up their efforts.[27] WWF concluded similarly, in its assessment of the implementation of the BSAP, that action itself was seriously delayed, and a simple, clear, and transparent reporting system was nowhere to be seen.[28]

By addressing this Weakness, we can turn these policies into even greater Strengths — simply by implementing them.

"Lack of knowledge is no excuse to delay our actions to practice a precautionary approach and to restore the health of the Baltic Sea."

[26] *European Environment Agency, State of Europe's Seas, 2015, p. 133.*

[27] *The first phase of implementation of the Marine Strategy Framework Directive, COM(2014) 97 final, EC, 2014*

[28] *Baltic Sea Action Plan – is it on track?, WWF Baltic Ecoregion Programme, 2013*

Strength 3:

Relates to the following Principles:

- Actively cooperate, sharing information, knowledge, perspectives, and ideas
- Inclusive, based on effective stakeholder engagement

STRENGTH #3: A long track-record of regional cooperation involving public, private and civil society actors

Any effort to tackle the sustainability challenges we face requires cooperation across national borders. On this point, the Baltic Sea region is already considered a model for transnational cooperation (although the cooperation across sectors leaves considerable room for improvement, as noted above).

HELCOM has been working for over 40 years to protect the environment of the Baltic Sea, and VASAB has facilitated regional coordination on spatial planning and development since 1992. Also in 1992, the Council of the Baltic States was established by the region's foreign ministers as an overall political forum for regional intergovernmental cooperation on issues related to e.g. economic trade, safety, democracy, human rights and sustainability.

A more recent addition is the previously mentioned EU Strategy for the Baltic Sea Region (EUSBSR), with its multiple objectives of saving the sea, connecting the region and increasing prosperity. At the subnational level, organisations such as the Baltic Sea States Subregional Co-operation (BSSSC) and the Union of Baltic Cities (UBC) have provided a platform for cooperation for 20 years.

All these processes involve extensive engagement with private and civil sector stakeholders, providing them with an opportunity to get their opinions heard as well as to get involved in concrete initiatives. There is great diversity in the Baltic Sea Region, and there is not always agreement on everything; but the region has also had a great deal of practice in working together to achieve common goals.

Strength 4:

Relates to the following Principle:

- Innovative and pro-active

STRENGTH #4: Financially strong economies with capacity to invest and innovate

The Baltic Sea region is one of the richest in the world. Many of the countries around the Baltic Sea have generally weathered the financial crises of recent years with their economies, and their traditional GDP growth, still in good shape, with relatively low levels of unemployment and public debt.[29] There is therefore capital to invest, to which the EU further contributes by committing additional funds for research and investment, as noted above.

FOUR OUT OF TEN

BSR COUNTRIES RANK AMONG THE TOP TEN ON THE GLOBAL INNOVATION INDEX IN 2014

This region also scores high in terms of innovation capacity. Three out of its nine countries rank among the top ten countries on the Global Innovation Index in 2014 — in fact, all Baltic Sea region countries can be found among the top 50 (out of 143 countries included in the Index). Four countries in our region are also among the top ten countries on the Global Cleantech Innovation Index 2014. The region's innovation capacity is already helping to develop a circular economy, based on clean technologies, circular material flows and renewable energy. We just need to speed up the process![30]

Also very importantly, surveys show that most people in the Baltic Sea region are willing to pay for a healthier marine ecosystem. Adding up their total "willingness to pay," researchers come up with a theoretically available "budget" of 3.8 billion Euros — about 1.5 billion Euros more that it actually would cost to achieve the Baltic Sea Action Plan (BSAP) targets.[31] Even if one were to dispute the exact numbers, these survey results nonetheless indicate that the citizens of the Baltic Sea recognize that our ecosystems are very valuable.

Summing up the Strengths of the Baltic Sea Blue Economy, our region has the knowledge, the collaboration structures, and the financial capacity to achieve a Sustainable Blue Economy. It also has a portfolio of very promising marine and maritime policies in place. If all actors work together to put these Strengths to work, and address these Weaknesses, we can take advantage of the tremendous Opportunities to create a truly Sustainable Blue Economy in our region.

[29] *State of the Region Report 2014, C. Ketels, H. Pedersen, et al., Nordea, June 2014 (accessed from http://www.bsr2014.eu/wp-content/uploads/Ketels-Pedersen.pdf)*

[30] *The Global Cleantech Innovation Index 2014 – Nurturing Tomorrow's Transformative Entrepreneurs, WWF and Cleantech Group, 2014*

[31] *The Baltic Sea – Our Common Treasure. Economics of Saving the Sea, BalticSTERN Secretariat, commissioned by the Swedish Agency for Marine and Water Management, 2013*

A BRIEF GUIDE TO MARINE AND MARITIME POLICIES

1992, The Habitats Directive and the Natura 2000 Network

The Habitats Directive, together with the Birds Directive, forms the cornerstone of Europe's nature conservation policy. It provides special protection for key sites (the Natura 2000 network), animal species, plant species and habitat types of European importance. The Natura 2000 Network is not a system of strict nature reserves where all human activities are excluded. Its emphasis is on ensuring that future management is sustainable, both ecologically and economically.

2000, The Water Framework Directive (WFD)

The Directive aims for good ecological status for all ground and surface waters in the EU by 2015. It establishes a six-year planning cycle, during which member states prepare River Basin Management Plans and develop actions and measures to achieve the 2015 target. The management areas have been designated according to the river basin as a natural geographical and hydrological unit, which request member states to cooperate.

2007, The EU Integrated Maritime Policy (IMP)

The Integrated Maritime Policy addresses the fact that different marine and maritime policies on for example maritime transport, fisheries, energy, tourism, and the marine environment have developed on separate tracks. IMP seeks to increase the coordination between different policy areas and focuses on issues that require the coordination of different sectors and actors. The Blue Growth Strategy is one of these issues, alongside with marine data and knowledge, maritime spatial planning, integrated maritime surveillance and sea basin strategies. Member states have been invited to draw up national integrated maritime policies, and to annually report on progress.

2007, The HELCOM Baltic Sea Action Plan (BSAP)

The BSAP is an agreement by the parties to the Helsinki Convention, HELCOM, to improve the environmental status of the sea by 2021. The BSAP is also seen as instrumental to the implementation of the EU Marine Strategy Framework Directive (below).

2008, The EU Marine Strategy Framework Directive (MSFD)

The MSFD is the environmental pillar of the EU Integrated Maritime Policy. MSFD sets legally binding requirements for EU member states to define, achieve or maintain Good Environmental Status (GES) in the EU regional seas by the year 2020. The Directive is built on other previous EU legislation, such as the Water Framework Directive, the Habitats Directive, the Birds Directive, and the legislation in the context of the Common Fisheries Policy.

2009, The EU Strategy for the Baltic Sea Region (EUSBSR

The EU Strategy for the Baltic Sea Region is the first macro-regional strategy in Europe. Like the other regional strategies, the strategy and its action plan aim at strengthening cooperation between member states as well as neighbouring countries, to promote a more balanced development in the area. Its three overarching objectives are "Save the Sea", "Connect the Region" and "Increase Prosperity".

2010, The Europe 2020 Strategy for smart, sustainable and inclusive growth

Europe 2020 is the European Union's ten-year jobs and growth strategy. It was launched in 2010 to create the conditions for smart, sustainable and inclusive growth. Five headline targets have been agreed for the EU to achieve by the end of 2020. These cover employment; research and development; climate/energy; education; social inclusion and poverty reduction.

2012, The Limassol Declaration

Adopted by European Ministers for maritime policy and the European Commission, the Limassol Declaration sets a marine and maritime agenda for growth, jobs, and competitiveness to back the Europe 2020 strategy.

2014 (May), The Sustainable Blue Growth Agenda for the Baltic Sea Region

Adopted by the European Commission, the Agenda does not have the legislative authority of a directive, but acts more as a set of recommendations for developing the region's common interests in the maritime economy. The focus is on innovation, and sustainability is a central concept. The agenda focuses on maritime sectors where there is a great potential for new jobs and growth; marine renewable energy, aquaculture, blue biotechnology, coastal tourism and sea bed mining.

2014 (July), The EU Maritime Spatial Planning Directive

The EU Maritime Spatial Planning Directive is an important component of the EU Integrated Maritime Policy. The directive creates a common framework for maritime spatial planning throughout Europe. Member states are expected to bring into force the laws, regulations and administrative provisions necessary to comply with the common EU rules for Maritime Spatial Planning by September 2016.

KEY OPPORTUNITIES

OPPORTUNITY #1: Implementing existing policies will help achieve the goal of having a healthy sea, which will in turn generate more income and more new jobs in the region

A HEALTHY BALTIC SEA WILL GENERATE DRAMATICALLY MORE JOBS AND INCOME

Implementing — in an integrated and mutually supportive way — existing policies to which countries have already committed, such as the EU Integrated Maritime Policy, the EU Marine Framework Directive and the Baltic Sea Action Plan, is crucial for achieving a healthy Baltic Sea, and should be seen as providing a high return investment. A healthy sea will generate dramatically more jobs and income than a sea that continues to suffer badly from eutrophication, pollution and overfishing. The difference reflected in the best available economic projections is huge: €32 billion in additional revenue, and 550,000 jobs (by 2030).[32]

Most of those new jobs would be expected to appear in the tourism sector, which also has the benefit of being one of the sectors that is easiest to "green": tourism facilities can be driven by renewable energy, serve sustainably harvested foods, and encourage visitors to conserve resources and engage with nature — all of which can further contribute to a healthy sea and a Sustainable Blue Economy.

We should recall however, that a healthy sea is worth far more than just monetary income and employment opportunities. Creating a Sustainable Blue Economy gives us the opportunity to restore the sea's beauty and the richness of its living ecosystems.

INCREASED MARKET DEMAND

IS EXPECTED FOR "GREEN" PRODUCTS AND SERVICES

"A recent study by the UN Global Compact and Accenture found that 88% of investors surveyed saw sustainability as "an opportunity for competitive advantage," and 78% saw it as "a differentiator in determining industry leaders."

OPPORTUNITY #2 : There are business and investment opportunities for companies that lead the sustainability transformation

Companies in the Blue Economy that learn to integrate sustainability into their core business, ahead of the competition, are the ones that stand to prosper the most in the future markets that are just around the corner. Most observers expect to see continued increases in market demand, the world over, for products and services produced in an environmentally and socially responsible way. They also expect an accelerating push for "greener" policies and incentives, which will increase the pressure on companies to adopt innovative, environmentally friendly methods for making products, transporting them around the world, and providing consumer services such as tourism.

The shipping sector in the Baltic Sea provides a good example. Since 2005, the Baltic Sea has been recognized by the International Maritime Organization as a Particularly Sensitive Sea Area (PSSA), which means an area in need of special protection. PSSA status, together with tougher sulphur emission and sewage discharge regulations, are already pushing technical development in our region (though not as fast as they could, as noted above). Many regional experts believe this regulatory push will make the Baltic region's shipping industry a pacesetter and position the Baltic shipping sector for global leadership, which will also present new export opportunities. In fact, Denmark is aiming to put green shipping at the core of its Blue Growth ambitions; and regional leaders like Maersk and Wartsilla are members of the Sustainable Shipping Initiative, which brings together some of the biggest companies in the maritime sector with the aim of creating a sustainable and successful shipping industry by 2040.[33, 34]

The demand for green shipping is also rising, as companies on land seek more environmentally friendly ways to move goods around. It is also well established that moving in a green and sustainable direction also helps companies in other ways, such as helping them to reduce waste and to attract, retain, and motivate their employees. There is a clear opportunity to build on this rapid process of corporate innovation and transformation, and to build our region's global reputation as market leaders in sustainable Blue Economy solutions.

"Sustainable" companies should furthermore find it easier to attract investors, and this trend — which is happening at the global scale — will only increase over time. A recent study by the UN Global Compact and Accenture found that 88% of investors surveyed saw sustainability as "an opportunity for competitive advantage," and 78% saw it as "a differentiator in determining industry leaders." But these studies also found that companies need to do more to connect with this enormous investor interest.[35]

These figures can translate to real opportunities for attracting investment and improving profitability available for those companies that take initiative, by applying sustainability thinking to the development of regional Blue Economy products and services.

A good sign of progress in this direction is the fact that the larger corporations in the Baltic Sea region, onshore as well as offshore, are already following the global trend towards increasing corporate social responsibility (CSR), which includes the expectation of enhanced environmental stewardship. More and more of them are setting goals and applying standards such as the Global Compact, the Global Reporting Initiative (GRI), ISO 26000 and ISO 14001.

But the private sector could become a much stronger engine in the transition to sustainability. To do that, it needs to be more proactive and take a clearer role as a promoter of change, not a resister — not just because of the responsibility it carries for the negative impacts on the Baltic Sea, but also because of the opportunities that are there to be seized. The jumble of national policy incentives in the region may not be in alignment with the objectives of sustainability yet, but there are other dynamics at play in the evolving global market that are partly compensating for that lack.

[32] *Turning Adversity into Opportunity, A Business Plan for the Baltic Sea, Boston Consulting Group, produced for WWF, 2013*

[33] *See for example the collection of articles on the future of Baltic shipping in the Baltic Rim Economies Quarterly Review, Special Issue on the Competitiveness of the Maritime Clusters in the Baltic Sea Region, Issue No. 4, 13 June 2013.*

[34] *Statement by Hans Brask, former Director, Baltic Development Forum, at Baltic Sea Conference 2013, 12 Sept 2013*

[35] *"Investors See Benefit of Sustainability, But at Odds with Business Leaders on Measuring Its Value," UNPRI, 11 September 2014, available from the UNPRI website (http://www.unpri.org)*

OPPORTUNITY #3 : The Baltic Sea can become a model region for a truly sustainable Blue Economy that is based on clean technologies, renewable energy and circular material flows

THE BALTIC SEA REGION

IS EXTREMELY WELL POSITIONED TO BECOME THE FIRST TRULY SUSTAINABLE BLUE ECONOMY OF THE WORLD

The Baltic Sea Region is extremely well positioned to become the first truly sustainable Blue Economy in the world, where both land-based and sea-based economic activities are transformed into "circular economies" that operate within the framework of ecosystem boundaries, relying on clean technologies, renewable energy, and closed-loop material flows. It can become a model where people and businesses prosper amidst healthy, well-managed ecosystems.

We have many of the right policies already in place that hold great promise — if they are implemented. We have the necessary know-how, technology, and capital. We have a regional population that appears willing to invest in a healthy sea. But if we want to succeed, we have to think in new ways: outside of the silos, beyond the ministry walls, and across the borders between economic sectors, countries, and issue areas. We also need to see policies and initiatives to improve the marine environment as high-return investments that will drive innovation and secure a more prosperous future.

To sum up the opportunities of the Baltic Sea Blue Economy: they are enormous. Just implementing the policies we already have in place will generate great economic returns. Pushing to innovate, and taking those innovations out to a global market, will create many new opportunities. And by doing these things, the Baltic Sea region will attract the attention of the world — and help the world accelerate change in a similar direction. We simply need to come together, determined to turn these possibilities into realities.

An increasing number of countries are making sustainability, in all its dimensions, a central pillar of national planning.

CONCLUSION: Considerable challenges, great opportunities

This sustainability analysis of the Blue Economy in the Baltic Sea region leads to an inescapable conclusion: yes, we face considerable challenges regarding where our region's economy currently is, and where it needs to go, in order to align with the Principles for a Sustainable Blue Economy. But it appears that the countries around the Baltic Sea are nonetheless sitting on a potential "gold mine" of opportunity.

What is needed now is a renewed common vision for the Baltic Sea region that is in line with the Principles for a Sustainable Blue Economy. Our region needs to set clear goals that raise the bar, take a series of fundamental actions to get things moving in the right direction, and monitor progress carefully.

If together we can succeed in rapidly developing a more sustainable Blue Economy — even if the actors in our region just start making a serious attempt — the Baltic Sea will be seen as a benchmark to which others should aspire, while also supporting the Baltic Sea region's industries to prosper as leaders in a fast-changing global market.

This idea of transforming marine-based economies, indeed all economies, to become sustainable is no longer a wild-eyed dream. A growing number of companies are setting goals such as "zero waste" or even "net positive impact" on the environment, while also committing themselves to be actors for social good. An increasing number of countries are making sustainability, in all its dimensions, a central pillar of national planning. The idea building prosperous and truly sustainable economies is even being written into the language of the new global Sustainable Development Goals, adopted by all countries at a United Nations summit in September 2015.

"A growing number of companies are setting goals such as 'zero waste' or even 'net positive impact' on the environment, while also committing themselves to be actors for social good."

If public and private sector actors can come together, see the big picture, and seize this moment of opportunity, then the Baltic Sea's unique and fragile environment can — by forcing us to innovate and adapt to its physical and biological limits — strengthen our Blue Economy and make it a prosperous model for the region and world.

A SUMMARY "SWOT" ANALYSIS OF THE BLUE ECONOMY IN THE BALTIC SEA REGION

Amount that people around the Baltic Sea would be willing to pay per year for a healthier environment

€ 4,000,000,000

Number of years of regional cooperation:

> 40

STRENGTHS

- Considerable knowledge about the Baltic Sea and about what is needed to restore it to health
- Many of the necessary policies are already in place
- Long track-record of regional cooperation involving public, private and civil society actors
- Financially strong economies with capacity to invest and innovate

Additional jobs that a healthy Baltic Sea can provide:

500,000

Percentage of investors who see sustainability as "an opportunity for competitive advantage":

88%

OPPORTUNITIES

- Implementing existing policies will help achieve a healthy sea that will generate more income and new jobs
- There are business and investment opportunities for companies that lead the sustainability transformation
- The Baltic Sea can become a model region for a truly sustainable Blue Economy that is based on clean technologies, renewable energy and circular material flows

Additional income that a healthy Baltic Sea can provide:

€ 32,000,000,000

Allocated budget for Blue Growth in Horizon 2020 for 2014–2015

€ 145,000,000

WEAKNESSES

- Lack of a scientifically-based definition of a Sustainable Blue Economy, that is translated into goals, targets and indicators, which can in turn guide marine and maritime sector policies and decision-making
- Lack of a holistic and cross-sectorial management of the Baltic Sea
- Lack of a level economic and legislative playing field that provides adequate incentives and rules
- Lack of accountability on policy implementation
- Lack of private sector leadership

Number of regional or national Blue Economy strategies in place that include environmental performance goals and targets that fully align with a circular economy:

0

THREATS

- The Baltic Sea Blue Economy is underperforming due to severe environmental stress from both land-based and sea-based human activities
- The Baltic Sea Blue Economy, as well as the land-based economies that surround it, are based on linear material flows and non-renewable energy
- Growth of the Blue Economy risks further stressing the Baltic Sea environment, as well as increasing the competition for marine space

Part of the Baltic Sea that is severely affected by human activities:

75%

Size of fish stocks compared to their historical average

-30 TO -40%

Potential future loss in tourism revenues due to eutrophication

10 TO 15%

AN URGENT CALL FOR VISION ... AND ACTION

Creating a sustainable Blue Economy is the defining challenge of the Baltic Sea Region. That is why WWF is calling for the adoption of the Principles for a Sustainable Blue Economy, presented in this report, as the region's chart to a prosperous future.

We who live and work in this region need to harness the energy and intention of the Blue Growth agenda, and develop it in meaningful ways that will lead us to a mutually desired outcome. The Principles are a vision, and a tool, to help us accomplish that.

Imagine a Blue Economy that, as it grows and develops, actually helps bring the Baltic Sea back to health, by fitting within the boundaries of the sea's ecosystems, accelerating the adoption of clean technologies and renewable energy, and creating circular material flows. Imagine that this process creates new jobs and economic opportunities. Imagine that every possible stakeholder gets involved, including government, business, academia, civil society groups, and individual citizens.

Imagine "all hands on deck."

OUR OWN FUTURES

AND THE FUTURE OF THE BALTIC SEA ARE INEXTRICABLY LINKED

We believe this vision is achievable. Is it worth the effort? In pure economic terms, we know that creating a Sustainable Blue Economy is worth billions in jobs and income. We know that citizens around the Baltic Sea are willing to make the necessary investment.[35] But we also know that not taking action will lead us down a path that is unthinkable. Without a common vision, clear definitions, and shared guidelines for evaluating our actions, we will be like ships sailing into stormy seas without so much as a compass. We will not know if the growth we are pursuing is indeed sustainable, or simply making our problems worse. And we will lack a framework to deal with the inevitable trade-offs and decisions that must be made along the way.

We believe that adoption of the Principles for a Sustainable Blue Economy leads to a number of specific actions that need to be taken if we are to increase the region's chances of achieving its stated goals. Many of these actions are not "new", and some are already being undertaken by various actors. But our joint efforts need to be scaled up significantly, if we are to succeed in changing course and creating a Sustainable Blue Economy.

WWF urges public, private and civil society actors to use the Principles as a lens through which we can define what "sustainable" Blue Growth in the Baltic Sea region should consist of, and assess whether our actions are taking us in the right direction. The Principles also are intended to motivate all actors to engage in a more urgent and focused effort to make the Sustainable Blue Economy a reality. Obviously, WWF supports working through the existing collaboration processes to ensure that good policies are turned into meaningful progress. But we also believe that if those processes fail to deliver, other processes may need to be created that can model more ambitious goal-setting and spur more accelerated action.

Specifically, WWF urges all actors in the region to do the following:

"Achieving a Blue Economy in the Baltic Sea that is based on clean technologies, renewable energy and circular material flows is of fundamental importance to secure its long-term economic prosperity."

1. Adopt a common vision, goals and targets for a sustainable Blue Economy

AAchieving a Blue Economy in the Baltic Sea that is based on clean technologies, renewable energy and circular material f lows is of fundamental importance to secure its long-term economic prosperity. Effecting such a transformation is also urgent: due to the dire state of the Baltic Sea, we must aim for nothing less than a sustainable Blue Economy, which should aim for zero negative impact (ZNI) on the Baltic Sea with targets such as zero waste, zero emissions, and limiting fishing to sustainable yields.

To know if we are moving in the right direction, and at an adequate speed, we must furthermore regularly report and assess progress towards these goals and targets at the regional, national, local, sector and organisational level. This reporting must be done with the sincere objective to communicate progress on the goals and targets to a wide audience, as well as to engage and encourage as many actors as possible in the struggle to achieve them.

Who should lead this action at the regional level? Theoretically, it can be realized through existing mechanisms, such as the EU Strategy for the Baltic Sea Region, and HELCOM's Baltic Sea Action Plan. But if the politics of our region cannot yet stretch to encompass this long-term vision within the formal mechanisms of government, then private and civil actors who understand the urgency of our situation, and who are willing to act, will have to build a critical mass.

[37] *Benefits of meeting the Baltic Sea nutrient reduction targets – Combining ecological modelling and contingent valuation in the nine littoral states, H. Ahtiainen et al., MTT Discussion Paper #1, 2012.*

Local initiatives have increasingly focused upon securing a better quality of environmental management. The public is engaged and many businesses are trying hard.

Photo: Dainis Derics / Shutterstock

2. Transform the vision, goals and targets for a sustainable Blue Economy into concrete joint action within and across different sectors, and along economic value chains

Many of the challenges involved in creating a Sustainable Blue Economy are too big for any single actor to solve alone. Achieving a sustainable Blue Economy requires cooperation. By joining forces, as well as by sharing ideas and information, the process of innovation and change can speed up dramatically.

"Of particular interest are the value chains in our largest sectors, fishing, tourism, and shipping — each of which can also benefit from innovation processes aimed at turning their negative environmental impact positive, and increasing the economic value they generate per unit of input."

We can already see this happening at the global scale, with many large, regionally-based companies (H&M, Maersk, and Nokia are examples) making serious efforts to address global challenges along their value chains. This kind of integrated approach to change can also be applied at the regional or national level, by involving private, public and the civil actors in collaborative processes, whose purpose is to find innovative solutions to improve the economic, social and environmental performance of Baltic Sea-based value chains.

Of particular interest are the value chains in our largest sectors, fishing, tourism, and shipping — each of which can also benefit from innovation processes aimed at turning their negative environmental impact positive, and increasing the economic value they generate per unit of input. Moreover, these sectors can be linked together: improvements in green shipping can, for example, be applied to cruise tourism, which can also benefit from sustainable fishing in our region (including recreational fishing).

Another approach is to form (or extend existing) Blue Economy clusters in the region with the express purpose of developing Blue Economy solutions that provide income and job opportunities, while restoring — rather than systematically undermining — the natural capital upon which the economy depends. Blue biotechnology holds special promise here, as the latest addition to the economic mix of the Blue Economy. So do new approaches to aquaculture that create truly closed-loop systems, on land, by keeping nutrients moving in cycles (turning "waste" from aquaculture into inputs to other production processes) and avoiding their release into an already-eutrophied sea. Creative economic mixtures can produce unexpected innovation; we just have to be willing to experiment, while keeping the Principles for a Sustainable Blue Economy in focus.

The possibilities are many. The first crucial step is to come together, talk, and think, so that we can identify the joint actions that are most likely to accelerate the transition to a Sustainable Blue Economy in the Baltic Sea region.

We need to create the right incentives to help improve the performance of the economy. as a whole, and steer it in the direction of a circular, sustainable Blue Economy."

3. Develop or review national Integrated Maritime Policies, as well as other related policies, so that they align with a sustainable Blue Economy

National Integrated Maritime Policies (IMP), as well as sector policies that fall under their umbrella, should aim for achieving a sustainable Blue Economy. A first and very important step in that process is to ensure that the policies help to achieve the goals and target already set within key environmental policies such as the EU Marine Strategy Framework Directive and the Baltic Sea Action Plan. To do that, the policies should translate these goals and targets into sector-based environmental performance targets that are followed-up and publicly communicated. But we also need to raise the bar, and make sure that these sector performance targets align with a sustainable Blue Economy, which will ensure economic prosperity into the future while resulting in zero negative impact on the Baltic Sea.

These IMP's and other strategies must also identify key actions that need to be taken to reach these targets. A critical action would be to create the right incentives to help improve the performance of the economy as a whole, and steer it in the direction of a sustainable Blue Economy (and note that this is in alignment with the EU's own agenda on the circular economy[37]). Regulations, taxes, fees and subsidies that are in conflict with this ambition must be reformed to push in the right direction: towards clean technologies, renewable energy, and circular material flows. Countries also need to learn from each other in this respect, with the aim of accelerating the creation and diffusion of best practices.

Good examples do exist, such as Sweden's use of lower "fairway fees" to incentivize the use of less-polluting fuels. But these efforts need to go much farther. Regional governance bodies, including national governments, need to conduct thorough and detailed reviews of all such economic steering mechanisms to make sure they consistently line up with long-term regional goals.

THE FINANCE SECTOR

HAS A CRUCIAL ROLE TO PLAY IN CATALYSING DEVELOPMENT TO A SUSTAINABLE BLUE ECONOMY

4. Ensure that public and private financing and investment criteria directed towards the Blue Economy help to achieve a sustainable Blue Economy

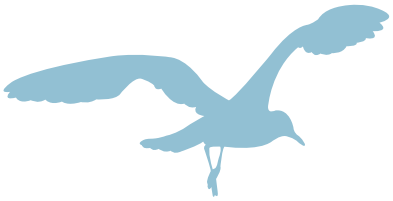
The finance sector, both public and private, has a crucial role to play. To catalyse the development of a Sustainable Blue Economy, investors and financial institutions need to revise their financing and investment criteria so that they help incentivize innovative solutions leading to a Blue Economy that is based clean technologies, renewable energy, and circular material flows.

These criteria should identify "no-go areas", such as financing or investments in damaging fishing methods, as well as "go areas" to actively support the development of green technologies — even if they appear initially more costly than the unsustainable technologies that they seek to replace. Investors and financial institutions need to take a long-term view that incorporates the expected future returns on investment from aiming for a Sustainable Blue Economy. Examples might include financing the development of technologies to achieve the zero emission and zero wastewater discharge vision for the shipping sector in the Baltic Sea region: while initially looking "more expensive," such advances will contribute to realizing the potential regional job gains and global market positioning described earlier.

Policymakers may need to help in this regard, by creating new economic incentives, including subsidies that reduce the perceived risk to investors who act on such long-term thinking. They also need to use regulations to push currently externalized environmental and social costs onto the balance sheets and into the pricing of goods and services. But there is a solid political basis for them to take these actions, revealed in the survey data, cited above, that demonstrate citizens' "willingness to pay." And since "paying" in this case actually means "investing" — because of the expected gains in regional innovation, jobs and revenue — motivating such incentives politically should not be difficult.

[37] *See the EU "Circular Economy Package": http://ec.europa.eu/environment/circular-economy/index_en.htm*

Creating a Sustainable Blue Economy in the sea also requires a sustainable 'Green Economy' on land.



In very practical terms, implementing the policies already in place — specifically the Marine Strategy Framework Directive and the Baltic Sea Action Plan — can take us very far down this road. Actually doing what governments and the EU agree must be done, will significantly reduce the load of nutrients and pollutants flowing into the Baltic Sea, a key element of this "green-blue" process. There can be no further delay in implementing these policies.

5. Use Maritime Spatial Planning as a tool to help achieve a sustainable Blue Economy

Ecosystem-based maritime spatial planning ("MSP"), one of the key tools in our regional policy toolbox, can help steer development towards a sustainable Blue Economy — if properly implemented. By seeking to allocate marine space for different uses, MSP can help to find the optimal balance, where nature protection and economic activity work together instead of at cross-purposes.

However since "ecosystem-based" is a rather complex concept — aiming for ecosystem health, through participatory, consensus-oriented, accountable, transparent, equitable and inclusive planning processes — its practical implementation needs to be clarified in the national laws and directives to give it a "common language" definition that will regulate this process.

Marine spatial planning processes also need to be informed about the range of benefits that ecosystem goods and services provide, including their economic and social benefits. They need to develop and/or make use of new tools to help decision makers to include the value of environmental and social costs and benefits that traditional market pricing fails to reveal — but which are nonetheless very real. Policy makers need to see clearly how planning decisions made today can result in better jobs, more income, higher quality of life, and a healthier sea tomorrow.

6. Integrate the "Blue" and the "Green" economic agendas

Finally, creating a Sustainable Blue Economy in the sea also requires a sustainable "Green Economy" on land. Partly this is because the on-going eutrophication and pollution of the Baltic Sea, as well as the changing climate, are mainly caused by land-based activities. But in addition, we have to accept the fact that there are no absolute borders between marine-based and land-based economies. The tourism sector, which straddles land and sea, is a very clear example; but the same holds true for all other marine-based sectors, as well as for many land-based economic sectors. When you unwind their value and production chains, and look at their dependence on healthy ecosystems, onshore and offshore, you realize that a systemic view is the only one that makes sense — even if, for practical reasons, we still divide many things up into "Blue" and "Green".

Visions, strategies, goals, targets and actions for a sustainable Blue Economy are as urgently needed for land-based economic activities as for sea-based. Those working for a Sustainable Blue Economy also need to lend their voice, their brainpower, and their political clout to help advance an integrated vision of sustainable economic practice, everywhere.

The possibilities are many. We must come together, talk, and think, so that we can identify the joint actions that are most likely to accelerate the transition to a Sustainable Blue Economy in the Baltic Sea region.

Working Together for Long-Term Prosperity

In this report, we have laid out a comprehensive picture of a new way forward in our region: the pathway to a prosperous and sustainable Blue Economy in the Baltic Sea. We have summarized the best existing research, assessed the current situation, and rung the alarm, calling for "All Hands on Deck" to raise the bar on our ambitions and work to achieve real and lasting change.

To support that process, we have offered a new set of tools that can guide decision-makers to take wise, concerted action. The Principles for a Sustainable Blue Economy are our chart to "the future we want" here in the Baltic: healthy ecosystems, economies, and people, all enjoying a high quality of life and secure in the sense that the future is full of promise, not peril.

We at WWF stand ready to work with all stakeholders to ensure that these words become reality, and sound policies turn into effective actions, benefiting ourselves today, and also benefiting natural ecosystems, as well as the millions of people who will become Baltic Sea citizens — the many generations still to come.

WWF Baltic Ecoregion Programme

DELIVERING RESULTS

We are an active and effective change agent for the conservation and sustainable management of the Baltic Sea

COOPERATION

We promote constructive interactions to create awareness, spread ideas and stimulate discussion among stakeholders and partners

REGIONAL NETWORK

We represent the largest membership network in the region and are present in every country surrounding the Baltic Sea

INFLUENCE REGIONAL POLICY

We are a diligent watchdog that monitors how governments manage our common resource, the Baltic Sea

WWF

Why we are here

To stop the degradation of the planet's natural environment and to build a future in which humans live in harmony with nature.

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WWF · ALL HANDS ON DECK – SETTING COURSE TOWARDS A SUSTAINABLE BLUE ECONOMY

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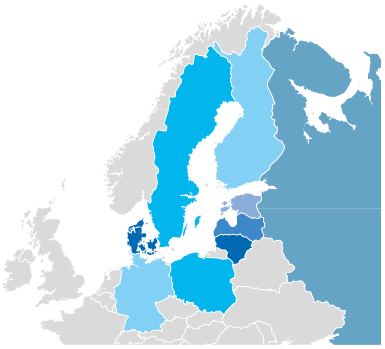
REPORT

2015

TECHNICAL ANNEX FOR BLUE ECONOMY



TECHNICAL ANNEX FOR BLUE ECONOMY

In this annex you will find a brief presentation of the Blue Economy in each Baltic Sea country, as well as of each country's Integrated Maritime Policy work.

The sector information presented in this annex draws heavily from a study commissioned by the European Commission, in 2013, that focused on the Blue Economy in the Baltic Sea region and its potential for growth (see sources below), complemented by some additional and more recent information. This study included an expert assessment of factors such as sector size, recent growth rates, and future potential. Based on this information, each Member State selected up to six sectors deemed to be the most promising for Blue Growth in the country until 2020. The country profiles in this annex focus on these sectors. Readers are referred to the EU study for more details.

Information on Russian sectors has been compiled via the Baltic Environmental Programme network and from various sources as noted in the text.

Key Terms

Marine: Related to the sea in general terms.

Maritime: Related to or connected with the sea in relation to shipping and other commercial or military activity.

IMP – Integrated Maritime Policy: EU legislation passed in 2011 in order "to develop and implement integrated, coordinate coherent, transparent and sustainable decision-making in relation to the oceans, seas, coastal, insular and outermost regions and in the maritime sectors."

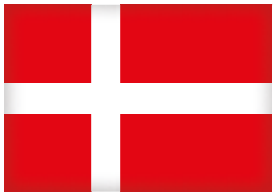
(Regulation (EU) No 1255/2011 of the European Parliament and of the Council of 30 November 2011 establishing a Programme to support the further development of an Integrated Maritime Policy)

Short sea shipping: Movement of people or cargo between European ports or between those ports and ports situated in non-European countries having a coastline on the enclosed seas bordering Europe.

Deep sea shipping: Movement of people or cargo between European ports and ports other than the above.

Sources

- Progress of the EU's Integrated Maritime Policy, European Commission, 2012
- Study on Blue Growth, Maritime Policy and EU Strategy for the Baltic Sea Region, Final Report and Country Fiches, December 2013 (commissioned by the EU Commission)
- HELCOM
- Interviews conducted with a variety of WWF country representatives, government officials, and Independent experts
- Individual country policy and strategy documents, as noted in the Annex text.



The Danish Blue Economy

IMP

Denmark´s government adopted an Integrated Maritime Strategy in in 2010, covering shipping, ports and infrastructure, fishery (including aquaculture) and fish processing, coastal and maritime tourism. The strategy aims to promote growth, reduce greenhouse gas emissions and air pollution, protect the marine environment and the coastal zone, and enhance safety at sea.

Most relevant and promising maritime sectors

Short sea shipping: Denmark is one of the largest shipping nations in the world, with its major destination ports being Sweden, Germany, Norway, UK and the Netherlands. Internationally, the most transported items are ferry goods, crude oil and mineral oil. Short sea shipping in Denmark is considered to have good potential for growth due to increasing trade with the Baltic States and Poland, growth of the offshore energy sector, and the increase of agricultural products export.

National strategy: Denmark at Work, Plan for Growth in the Blue Denmark (2012)

Coastal tourism: Coastal tourism is big in Denmark, not the least since all tourism is classified as coastal due to the country's geography. The sector declined during the financial crisis but has grown since.

National strategy: New Tourism Strategy (2009-2015)

Fish for human consumption: Denmark is the largest fisheries export nation in the region with Germany, Norway and Italy as its largest customers. Fish catch volumes and value have been rising in Denmark since 2011.

Passenger ferry services: Most of the ferries connect the Danish big and small islands. The main international destinations are Sweden, Germany and Norway. In terms of Gross Value Added, the sector grew by 37% between 2008 and 2010, a trend that continued in 2011.

Marine aquaculture: Marine aquaculture is one of the fastest growing sectors in Denmark and has experienced a 7-fold increase in volumes since 2008. The main aquaculture species produced are rainbow trout (26% in sea cage production and 70% of production in the Baltic Sea) and blue mussels (mostly North Sea). Development is supported by national strategies and substantially financed by both national and EU funds.

National strategy: Strategy for sustainable aquaculture in Denmark 2014–2020, Dansk Fiskeri og Akvakultur, Nye rammer, ny vækst (2014)

Offshore wind: Denmark is a forerunner in offshore wind production. In 2011, 36% of the national wind power production was produced by 12 offshore wind parks, half of which in the Baltic Sea. A new Energy Agreement states that by 2020, 50% of the electricity will come from wind power (compared to 28% today). 75% of this growth is expected in offshore wind farms.

Strategic plan in place: Energy Strategy 2050 – from coal, oil and gas to green energy.

SIZE OF MOST RELEVANT AND PROMISING MARITIME SECTORS IN DENMARK

Sector	Gross Value Added (million €)	Employment (jobs)	Number of enterprises
Short sea shipping	2 720	10 190	448
Coastal tourism, yachting, marinas and cruise industry	1 016	20 835	1552
Fish for human consumption	760	10 840	N/A
Passenger ferry services	200	750	17
Marine aquaculture	10	190	N/A
Offshore wind	70	330	44

The Estonian Blue Economy

IMP

The Estonian Maritime Policy 2012-2020 presents a vision, objectives and specific goals for its maritime economy, covering shipping, shipbuilding and tourism, as well as maritime safety and the marine environment. The policy also presents a governance structure for its implementation, as well as estimated costs.

Most relevant and promising maritime sectors

Water projects: This sector is the largest sector in terms of Gross Value Added and covers activities such as port construction, piling, excavation and concrete works, equipment rental, and consulting services. It is tightly related to the expansion projects of Estonian ports and marinas.

Shipbuilding (excl. leisure boats) and ship repair: Shipbuilding is the largest sector in Estonia in terms of people employed. It is also one of the fastest growing maritime sectors. The sector is heavily dominated by one company, Baltic Ship Repair Company (BLRT), which accounts for about 75% of the total turnover of the sector.

Short and deep sea shipping: Estonia is acting as a transit and distribution centre for goods going e.g. from Finland through Estonia and onwards to the Balkans, Ukraine and Turkey or from the rest of Europe to Russia through Estonia. The development of the Arctic sea route is also expected to bring extra volumes to North-South transportation in the far future and there is also the future possibility that large container ships from East Asia will come to Estonian ports, as the ports are deep enough and they strive for that goal. Total cargo volumes increased by 5.4% from 2010 to 2011 and deep sea shipping was the only maritime sector that experienced growth between 2008–2010.

National strategy: Estonian Transport Development Plan 2014–2020

Fish for human consumption: The focus of this sector is on catching and freezing mainly sprat and herring, selling them largely to Russian and Ukrainian markets. The demand from these markets is expected to grow, but since the catch quotas will not increase, Estonian fisheries plan to become a logistical purchasing agent for the region for freezing and re-sale to eastern markets.

National strategy: The Estonian Fisheries Strategy for 2014–2020

Yachting and marinas: While this sector shrank in size between 2008–2010, it is considered to have future potential. The development of a network of small marinas along the Estonian coast has occurred over the last ten years and this work will continue, especially in the development of related services.

SIZE OF MOST RELEVANT AND PROMISING MARITIME SECTORS IN ESTONIA

Sector	Gross Value Added (million €)	Employment (jobs)	Number of enterprises
Water projects	810	1 800	49
Shipbuilding (excl. leisure boats) and ship repair	410	4 920	173
Short sea shipping	220	400	107
Deep sea shipping	120	200	57
Fish for human consumption	60	4 660	926
Yachting and marinas	80	300	39

The Finnish Blue Economy

IMP

An inter-ministerial committee under the Prime Minister's office has the role to coordinate and follow up the implementation of an Integrated Maritime Policy in Finland, but there is no national strategy in place that seeks to sustainably develop its marine and maritime economic sectors as a whole. However, current policy work evolves around another concept — "Bioeconomy" — or, when addressing sea-based economic activities, Blue Bioeconomy. The aim is to develop bio-based economies while also efficiently use natural resources in circular flows. Blue Bioeconomy only includes "bio" sectors, which means that sectors such as shipping and wind/wave energy are not addressed in this strategy. A national Blue Bioeconomy strategy was adopted in 2014, and a roadmap for a Blue Bioeconomy will be developed.

Most relevant and promising maritime sectors

Short sea shipping: Short sea shipping accounts for 90% of the Finnish exports and 70% of its imports. The total volume transported by sea decreased by 5% between 2007 and 2011.

National strategy: Strategy for Maritime Transport 2014–2022

Passenger ferry services: This sector provides most of the Gross Value Added in the Finnish maritime economy and is considered to have the most future potential. Over half of the international travellers to Finland come by sea, mainly arriving in Helsinki, Turku and Maarianhamina. Turnover of coastal and maritime passenger transport grew by 8% between 2007 and 2011.

Shipbuilding (excl. leisure boats) and ship repair: The Finnish Shipbuilding sector has gone through a large restructuration and still faces important challenges. However, since the country has high knowledge in Arctic shipbuilding and maintenance, the sector is selected out as one of the most promising.

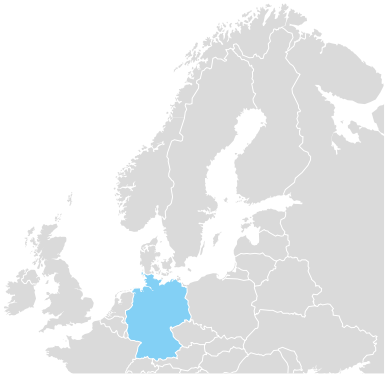
Coastal tourism: Coastal tourism is considered to be one of the most promising maritime activities in Finland, with further growth potential not the least through regional cooperation under the "Baltic Brand". Russian visitors are very important for Finnish tourism at large and account for about half of the foreign visitors.

National strategy: Finland's Tourism Strategy to 2020

Yachting and marinas: After decades of growth, also this sector faced a decline during the economic crisis, but is now growing again. Yachting is very popular in Finland, but the majority (about 80%) of leisure boats produced in Finland are exported to other countries (while also about 80% of the boats bought in Finland are imported).

SIZE OF MOST RELEVANT AND PROMISING MARITIME SECTORS IN FINLAND

Sector	Gross Value Added (million €)	Employment (jobs)	Number of enterprises
Short sea shipping	120	1 210	34
Passenger ferry services	90	1 330	24
Shipbuilding (excl. leisure boats) and ship repair	76	2 348	160
Coastal tourism	30	1 070	155
Yachting and marinas	32	916	101



The German Blue Economy

IMP

The Maritime Development Plan - Strategy for a German integrated maritime policy, adopted in 2011, is the overall maritime policy framework in Germany. Its objectives are to strengthen maritime and marine science and research as well as technological innovation, sustainably use the seas, improve maritime safety, protect coastal zones and the marine environment, and increase the quality of life in the coastal areas. The strategy focuses on traditional maritime sectors such as shipping, shipbuilding and marine technologies and is supplemented by an action plan. A number of German coastal Länder have also adopted subnational maritime strategies. Linked to the German IMP, is its National Strategy for the Sustainable Use and Protection of the Seas, adopted in 2008. This strategy is broader in scope, covering all main marine-based economic sectors, including e.g. tourism.

Most relevant and promising maritime sectors

Coastal tourism, yachting and marinas: This sector, heavily dominated by coastal tourism, is by far the largest German Baltic Sea maritime sector in terms of people employed. It is also one of the largest maritime activities in terms of Gross Added Value generated, and is growing further. It is seen as an important cornerstone in the economies of the coastal regions in Germany.

Short sea shipping: German short sea shipping in the Baltic Sea was hit rather hard under the recent economic crisis but is now growing, mainly as a consequence of increasing trade relations between Germany and the Baltic States as well as Russia.

National plan: Port development plan to 2025

Shipbuilding (excl. Leisure boats) and ship repair: Germany's shipbuilding industry has seen a decline for decades due to growing competition from the Far East, an more recently also due to the economic crisis. It is now focusing on technologically sophisticated niche markets to stop the decline and start growing again.

Cruise tourism: This is a relatively small maritime sector but is considered as promising since it has seen a rapid growth in the last decade.

Offshore wind: Due to Germany's nuclear power phase-out and climate protection targets, the extension of offshore wind energy is a main concern of the Federal Government. Therefore, the rapid growth of the last years is anticipated to continue. The majority of Germany's offshore wind capacity will be installed in the North Sea, but this sector is considered as promising also in the Baltic Sea region.

Blue biotechnology: Germany is the only country in the region that lists Blue biotechnology among the most promising sectors. This sector is just emerging and mainly focused on research and development. It is however expected to grow considerably in the future.

SIZE OF MOST RELEVANT AND PROMISING MARITIME SECTORS IN GERMANY

Sector	Gross Value Added (million €)	Employment (jobs)	Number of enterprises
Coastal tourism, yachting and marinas	1 270	50 570	4479
Short sea shipping	1 680	10 460	585
Shipbuilding (excl. leisure boats) and ship repair	460	9 170	266
Cruise tourism	170	2 220	23
Offshore wind	120	1 360	32
Blue biotechnology	N/A	N/A	N/A

The Latvian Blue Economy

IMP

Latvia established in 2011 an inter-ministerial group to deal with IMP, with the main objectives to better coordinate sector policies and improve the sharing of information and data. The Latvian strategic documents are in general land-oriented but maritime issues are increasingly being highlighted. All of the most relevant and promising maritime sectors listed below, are addressed by the *Sustainable Development Strategy of Latvia until 2030 and the National Development Plan (2014–2020).*

Most relevant and promising maritime sectors

Fish for human consumption: This sector has been rather stagnant the last year in terms of economic output and employment. It is still considered as important, mainly due to its positive contribution to the Latvian economy, and especially to the economies and employment in the country's coastal areas. The main species caught by the Latvian fishing fleet are sprat, herring and cod.

National plan: Fisheries Strategic Plan (2007–2013)

Coastal tourism: Coastal tourism has been growing during the past decade, and is expected to continue to grow, providing a variety of job opportunities. Riga in particular is becoming a popular attraction in Latvia, but tourists also come to visit nature, spas and cultural sites. On the coast of the Baltic Sea and the Riga Gulf the number of tourist campsites, holiday dwellings and other tourist accommodation establishments has increased constantly, even during the economic crisis period.

National strategy: Tourism Marketing Strategy of Latvia (2010–2015)

Passenger ferry services: The number of sea passengers has constantly increased over the last decade and is expected to grow further. It is considered to playing an increasingly important role in Latvia's economy, also having important spill-over effects on other sectors.

National plan: Transport Development Guidelines for 2014 to 2020

Short sea and deep sea shipping: Latvia has since long established itself as a transit country and both short sea and deep sea shipping are expected to grow. The bulk of the cargo entering Latvia comes from Russia (mostly oil products, fuel and coal). These sectors were chosen among the most promising due to its important role in the national economy and positive growth trends during the last years.

National plan: Transport Development Guidelines for 2014 to 2020.

SIZE OF MOST RELEVANT AND PROMISING MARITIME SECTORS IN LATVIA

Sector	Gross Value Added (million €)	Employment (jobs)	Number of enterprises
Fish for human consumption	70	8 060	601
Coastal tourism	50	5 200	604
Passenger ferry services	40	1 190	28
Short sea shipping	20	570	82
Deep sea shipping	4	120	18

The Lithuanian Blue Economy

IMP

Lithuania established an inter-ministerial Commission on Integrated Maritime Policy in 2010, chaired by the Deputy Minister of Transport and Communications and assisted by the Ministry of Foreign Affairs and the Ministry of Environment. The Commission was tasked to verify the content of all existing strategies to ensure that there were no contradictions and that they are inter-linked. An IMP governance framework was set up in 2012 where the Ministry of Transport and Communication is acting as the coordinating body.

Most relevant and promising maritime sectors

Fish for human consumption: Traditional fishing plays an important role in coastal areas by providing job opportunities. During the last years, the number of Lithuanian fishing vessels has decreased while its tonnage has increased.

National programme: Operational programme of the Lithuanian Fisheries Sector for 2014–2020

Shipbuilding (excl. leisure boats) and ship repair: Denmark, Germany and Norway are important trading partners. Exports to Norway grew 137 times larger (!) between 2004 (€ 135 thousand) and 2009 (€ 18,5 million). The Lithuanian shipbuilding and repair sector has earlier experiences a steep decline, shrinking several times, du to competition from Asian countries. The shipbuilding sector in Lithuania is now changing direction and transforming toward building more complex ships of higher value added.

Short sea shipping: Short sea shipping is considered one of the promising maritime activities in Lithuania because of its significant current growth rate (the cargo turnover at the Port of Klaipeda, doubled between 2002 and 2012), as well as expected continued growth. Lithuania's most important transport partners are Russia and Belarus.

National strategy: Lithuanian Long Term (until 2025) Development Strategy of the Lithuanian Transport System

Coastal tourism: Coastal tourism has been singled out as one of the most promising maritime sectors in Lithuania, mostly since it is expected to provide an opportunity for sustainable development of the Klaipeda region around its natural and cultural assets.

National programme: National Tourism Development Programme 2014–2020

Water projects: This sector is considered as one of the most relevant and promising maritime economic activities. Significant investments have been made by the Seaport Authority into port infrastructure, in the form of construction and reconstruction of quays and deepening of ports and entrance channels.

In addition, the **energy sector** is prioritized in marine planning to ensure safe energy supply. Several energy infrastructure projects are implemented in the Baltic Sea, such as the electric connection NordBalt between Sweden and Lithuania, and the liquified gas terminal that has been installed in the Klaipeda port. There are also plans to install offshore wind parks.

SIZE OF MOST RELEVANT AND PROMISING MARITIME SECTORS IN LITHUANIA

Sector	Gross Value Added (million €)	Employment (jobs)	Number of enterprises
Fish for human consumption	98	7 840	396
Ship building	68	3 483	114
Short sea shipping	39	699	89
Coastal tourism	11	1 510	317
Water projects	10	872	21

The Polish Blue Economy

IMP

The Maritime policy of Poland was adopted in March 2015 and seeks to contribute to the objectives set out in "Europe 2020: A European Strategy for Smart, Sustainable, and Inclusive Growth". The main objectives of the policy are to strengthen the position of Polish seaports, increase the competitiveness of Polish maritime transport and ensure maritime safety and security. But it also aims to improve the marine environment, create conditions for the development of the maritime economy, rationally use marine natural resources, sustainably manage marine fishery, and strengthen national energy security.

Most relevant and promising maritime sectors

Coastal tourism: Coastal tourism is among the fastest growing sectors in Poland. It plays a significant economic role, both in terms of Gross Value Added and in people employed, not the least in many peripheral areas of Poland where it is seen as the only realistic alternative to fishery.

National plan: Directions for tourism development until 2015

Shipbuilding and ship repair: This is the second most important maritime industry in Poland in terms of Gross Value Asses, and the most important in terms of employment. While the Polish production of ships has dropped dramatically in recent years, the ship repair sector has grown considerably.

Offshore wind: There is no offshore wind farm installed yet in Poland, but a licensing process started in 2012 which as resulted in several permits. It has been estimated (by Ernst and Young/EY) that the development of offshore wind will result in more than 30 thousand new jobs in Poland during the period 2012–2025.

National plan: Polish Energy Policy until 2030

Yachting and marinas (leisure boat building): After a decline during the economic recession, this sector grew considerably up to 2011. Further growth is expected, although at a lower pace.

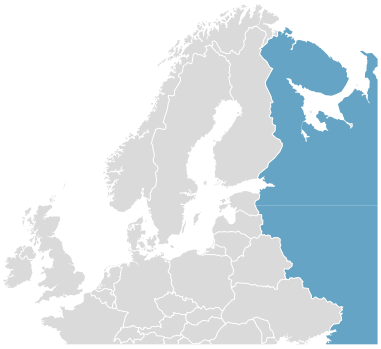
Marine aquaculture: Marine and inland aquaculture is considered to have potential to diversify the sources of protein for society. The idea of using aquaculture for protection of the marine environment is in the initial stages of development in Poland.

Offshore oil and gas: Offshore oil and gas has been one of the fastest growing maritime sector in Poland, but the extraction under the jurisdiction of Polish authorities plays a marginal role in the Polish economy as well as for ensuring security of the energy supply in the country. There are no expectations that the extraction of oil and natural gas will increase drastically in the future (the new issue in Poland is the discovery of shale gas reserves in the country), but the largest Polish enterprise and its partners have started exploratory drilling on the Latvian sea shelf.

National plan: Polish Energy Policy until 2030.

SIZE OF MOST RELEVANT AND PROMISING MARITIME SECTORS IN POLAND

Sector	Gross Value Added (million €)	Employment (jobs)	Number of enterprises
Coastal tourism	241	18 050	3 541
Shipbuilding (excl. leisure boats) and ship repair	301	11 929	2 076
Yachting and marinas	78	4 050	381
Offshore oil and gas	80	2 060	72
Marine aquaculture	1	60	5
Offshore wind	0	0	0



The Russian Blue Economy

IMP

Russia is the only country in the Baltic Sea Region that is not member of the EU. Russia is, however, a HELCOM contracting party and has as such committed to implementing the Baltic Sea Action Plan, which also means that Russia is indirectly linked to the EU Marine Strategic Framework Directive and a number of other EU marine policies. Russia is also, as a neighbouring country, taking part in some of the projects under the EU Strategy for the Baltic Sea Region. Further, the OECD accession process (currently on hold for Russia) provides incentives for Russia to harmonize its environmental legislation in the region with that of the EU.

Russian Maritime Policies

The objectives of the Russian Federation Maritime Doctrine 2001-2020 are to maintain the fleet and the coastal port infrastructure at a level that guarantees economic independence and national security, reduce transport costs, and increase trade and transit traffic through the Russian territory. It also aims at effectively exploiting Russian marine biological resources such as fish, minerals and energy, and to develop and use the oceans for the defence and security of the country.

The special objectives in the Baltic Sea are to develop coastal port infrastructure, create conditions for sustained regional economic cooperation and joint management of marine natural resources, economic and military security, to develop maritime transportation and ensure the protection Russian sovereignty and international rights on the Baltic Sea.

There are several programmes and strategies in place of relevance to the Russian maritime sectors in the Baltic Sea, such as the Federal Targeted Programme of Kaliningrad region development (2001–2014) (shipping, offshore energy and tourism), The Russian Federation Strategy of Tourism Development till 2015, Strategy for Aquaculture Development in the Russian Federation until 2020, Transport Strategy of Russia till 2030, Development Strategy for Transport-Logistic Complex of St. Petersburg, The Russian Federation Strategy on Energy till 2030, and The Strategy of Geological Industry Development until 2030.[37]

Russia's Blue Economy in the Baltic Sea

Shipping and ports: Russia is currently expanding its port capacities further to shift away from using ports in the Baltic countries. Russian export of oil is one of the key drivers for the growing container shipping volumes in the Baltic Sea.[38] The total commodity turnover is the cargo trade seaport of St. Petersburg was 8,141,000 tonnes in 2014 (of which 28% was steel) and 75,690,000 tonnes in Ust-Luga Seaport (mainly forestry products, coal, fish, cars and other vehicles). The total turnover in the Primorsk Oil terminal, the largest Russian oil terminal on the Baltic Sea coastline and the endpoint of Baltic oil pipeline system, was 53,700,000 tonnes in the same year.

Shipbuilding: Shipbuilding is one of the leading industries in the Saint-Petersburg region, employing around 50,000 people.

Oil and gas: In the southeast Russian waters there are 16 million tons proven oil reserve. Large-scale oil production started in 2004 and the volume of oil production is up to 700 thousand tons per year. Russia is currently expanding its oil and gas export infrastructure (terminals and pipelines) in the Baltic Sea. A new oil port was opened in 2012 in Ust-Luga situated south-west of St. Petersburg.[39] The Nord Stream gas pipeline exports about 50 billion cubic meters of natural gas each year.

Offshore wind: There are no Russian wind-farms installed in the Baltic Sea yet, but offshore wind is being prospected in the water area near Kaliningrad region.

Tourism: St Petersburg is a very popular tourist destination and one of the cities that receives most cruise tourists in the region.[40]

Fisheries and aquaculture: Russia catches about 6% of the fish caught in the Baltic Sea. Aquaculture is considered as very promising industry in the Gulf of Finland.[41]

[37] *National and regional strategies with relevance for Russian maritime space, BaltSeaPlan Report 6, 2011.*

[38] *ESaTDOR European Seas and Territorial Development, Opportunities and Risks, Annex 4 to the Scientific Report: Baltic Sea Regional Profile, ESPON, 2013.*

[39] *(Same as above.)*

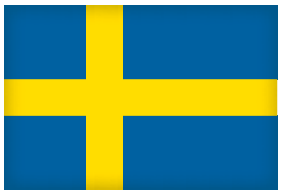
[40] *Baltic Sea Sewage Port Reception Facilities HELCOM Overview 2014*

[41] *HELCOM website*

The Swedish Blue Economy

IMP

The Swedish parliament adopted a national Integrated Maritime Policy in 2009. It calls for sustainable use of maritime and coastal resources, covering a number of aspects such as governance, maritime spatial planning, international and regional cooperation, marine knowledge, fisheries, shipping and protection of the marine environment. In order to implement the policy, a new Agency for Marine and Water Management was set up in 2011. A maritime strategy is currently being developed that also will take on board the task to implement the EU's Blue Growth strategy at the national level.



Most relevant and promising maritime sectors

Coastal tourism: The coastal tourism sector is the largest Swedish maritime sector, and also one of the sectors that has grown most during the last years. The Gross Value Added generated increased by 15% between 2008 and 2011 and the number of persons employed rose from 49,764 to 53,559. It considered to have good prospects for future additional growth.

National strategy: Nationell strategi för svensk besöksnäring 2020

Passenger ferry services: This is the second largest maritime activity in Sweden. Although its growth has been limited the last years, even experiencing a strong decrease in at the turn of the century (dropping by 22%), it is expected to grow further during the coming years. Stockholm and Helsingborg are the two biggest harbours, representing 58% of the total passenger traffic.

Short sea shipping: Short sea shipping is seen as an important economic sector in Sweden, but has recently experienced difficult times. The number of vessels has strongly decreased in the last years and the Swedish shipping sector currently faces considerable challenges regarding both its economic competitiveness as well as environmental and safety requirements. To address these challenges, the Swedish government launched an action plan in 2013.

Cruise tourism: Cruise tourism is a small sector compared to coastal tourism but it is growing much faster. Stockholm is the major destination and accounted for almost 80% of the total number of cruise passengers in 2010. Cruise vessel calls in Swedish ports increased by 88% in the last decade, from 383 in 2002 to 720 in 2011. The number of cruise ship calls in Stockholm increases by around 10% every year. The size of cruise ships has also grown significantly.

Marine aquaculture: Marine aquaculture is presently of minor economic importance but receives clear political support. The three main species farmed are rainbow trout, arctic char and blue mussel (only on the west coast of Sweden), where the first two are increasing and the latter is stable. Aquaculture is mostly considered promising on Sweden's west coast, while the potential for further development is considered to be limited due to the excess of nutrients in the Baltic Sea.

National strategy: Strategy for Swedish Aquaculture

Offshore wind: Offshore wind is a small but growing maritime sector, supported by the national energy policy. Future Swedish offshore projects will most likely be produced where costs are the lowest, which is mainly in the Baltic Sea.

SIZE OF MOST RELEVANT AND PROMISING MARITIME SECTORS IN SWEDEN

Sector	Gross Value Added (million €)	Employment (jobs)	Number of enterprises
Coastal tourism	810	23 980	2 985
Passenger ferry services	430	10 340	515
Short sea shipping	520	8 920	3 417
Cruise tourism	520	1 100	N/A
Marine aquaculture	3	147	64
Offshore wind	2	46	N/A

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