



WWF

FUTURE
SCENARIOS

2012



COUNTER CURRENTS

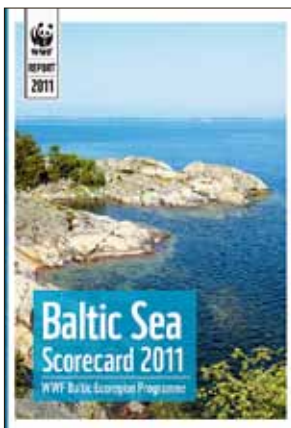
SCENARIOS FOR THE BALTIC SEA TOWARDS 2030

THE BALTIC SEA IS A SEA OF EXTREMES



IN 2010 AND 2011

WWF RELEASED TWO
REPORTS ILLUSTRATING
THE OVERWHELMING
CHALLENGES FACING THE
BALTIC SEA



The Baltic Sea is a sea of extremes – the youngest sea on the planet, one of the world’s largest brackish water bodies and one of the world’s busiest maritime areas. It is a sensitive, dynamic and highly interdependent marine ecosystem, surrounded by nine countries with diverse political, social and economic realities and trends. It is fed by rivers and streams which drain an area more than 4 times larger than the sea itself, stretching from the Ukraine to Norway and home to more than 85 million people.

Over the past 100 years, the Baltic Sea has changed and degraded quite dramatically. Human pressures today are so powerful that they are altering the ecological balance, depleting renewable resources beyond safe biological limits and jeopardizing future use of ecosystem goods and services.¹ Even in a global context where sustainable management of natural resources in the sea lags far behind the terrestrial context, the Baltic Sea presents a showcase of the mediocre performance of the surrounding coastal countries in balancing economic and social uses with the protection of the sea.

Through WWF’s collective work to develop, advocate and implement solutions to protect the Baltic marine ecosystem and ensure the sustainable use of its resources, we have experienced firsthand the growing realization that our own futures and the future of the Baltic Sea are inextricably linked. The 2010 WWF report ‘Future Trends in the Baltic Sea’^{2a} highlighted the substantial growth trends expected in the region over the next 20 years. A year later, WWF released its 2011 ‘Scorecard’ report^{2b} to evaluate the degree to which governments around the region were honouring their commitments to some of the most important environmental agreements and conventions designed to protect and manage the Baltic Sea. The results were disappointing.

These two reports succinctly illustrate two overwhelming challenges for the Baltic Sea:

- 1) the tremendous projected growth which will place even more demands on an already over-stressed ecosystem, and
- 2) a governance framework that is not only unable to deliver the needed protection for the Baltic Sea today but is clearly ill-equipped to meet the oncoming challenges.

They demonstrate that the sheer scale of the challenges facing the Baltic Sea requires a much broader engagement and action – of both the public and private sectors – than exists today. Real leadership is desperately needed. It was with this in mind that WWF, with financial support from Trygg Hansa/RSA, launched this Baltic Scenarios process in 2011, with the intention to facilitate a broad dialogue including both the public and private sectors. The focus has been to ask ourselves what kind of future we really want in the Baltic Sea as a basis from which to begin to define what kind of commitments and action will be needed in order for us to reach this desired future.

Of course we do not know what the future holds. Scenarios, however, help us describe possible futures, which is what this report aims to do. By describing what is possible tomorrow we believe we can better prepare ourselves for potential actions and responses today. Our focal question for this Baltic Scenarios exercise has been: **Possible futures for the use of the Baltic Sea towards 2030.** We have identified a suite of underlying trends that affect our focal question, some of which may be considered certain and other trends that are inherently uncertain.

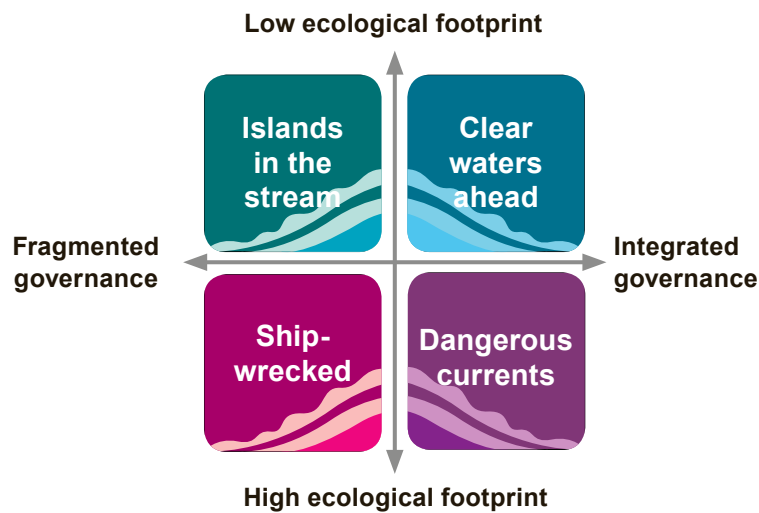
¹ Ecosystem Health of the Baltic Sea, 2010 HELCOM Initial Holistic Assessment, Baltic Sea Environmental Proceedings No. 122, HELCOM

^{2a} http://wwf.panda.org/what_we_do/where_we_work/baltic/publications/7194764/Future-trends-in-the-Baltic-Sea

^{2b} http://wwf.panda.org/what_we_do/where_we_work/baltic/publications/7201517/WWF-Baltic-Sea-Scorecard-2011-Report

The scenarios presented here are based on two overarching strategic uncertainties, which we have called “Governance” and “Ecological Footprint”. These are uncertainties that we have deemed of the highest strategic importance in terms of their influence on the usage of and impacts on the Baltic Sea. Thus trends and uncertainties provide the structure for our exploration of the future.

Through an exploration of these trends on the directions that the Baltic region could go in terms of Governance and Ecological Footprint, we emerge with four scenarios describing possible states for the Baltic Sea region in 2030. In sum these are:



The scenarios presented here are based on two overarching strategic uncertainties, which we have called “Governance” and “Ecological Footprint”.



Photo: Lasse Burell

Clear waters ahead (integrated governance, low ecological footprint): High levels of collaboration across and within governments and the private sector, combined with an enlightened awareness and acceptance of responsibility for the causes and consequence of ecological footprint, have led to a region that is close to an equilibrium measured against an aggregate of economic, social and environmental indicators. There is a common sense of destiny and empowerment, even in the face of adversity. The Baltic Sea’s ecological resilience has improved slowly from the previous decades of neglect and mismanagement, with species and habitats showing strong signs of recovery alongside a thriving regional economy.



Photo: Bernard Richter

Dangerous currents (integrated governance, high ecological footprint): Governments and companies have taken seriously their commitments and responsibilities to work together, recognizing the mutual gains to be had from collaboration. Yet this does not extend to the environmental sphere. The economic model of the late 20th century continues apace, treating environmental goods and services as externalities and measuring both corporate and national success on short term indicators. Ecosystem collapse has occurred on several fronts and more is imminent.



Photo: Dainis Dzelics

Islands in the stream (fragmented governance, low ecological footprint): The web is the greatest resource and connector between the Baltic Sea countries. Due to several failures in cooperation, shifting foci and pressure from external sources, Baltic Sea governments have lost the will to negotiate and collaborate. Without their leadership, regional sectoral initiatives have also largely dissolved. Yet at the individual level, people and companies have taken up the clarion call for “one planet living”. This has made some impact on the state of the Baltic Sea environment, but it is simply not enough.



Photo: Alan Lauga

Shipwrecked (fragmented governance, high ecological footprint): The region is characterized by fragmentation and mistrust. Political parties dominated by old-fashioned business interests are playing to old stereotypes to build protectionist walls and downplay any potential advantages to collaboration for the “common” cause. The environmental decline of the Baltic Sea has accelerated, but the powers-that-be have positioned themselves to benefit from rising prices and new business opportunities to sell alternatives for what was once a free and shared resource.



Photo: Germund Seilgrøn



Human pressures today are so powerful that they are altering the ecological balance, depleting renewable resources beyond safe biological limits and jeopardizing future use of ecosystem goods and services.

Having developed these four possible scenarios for our interlinked economic, social and ecologically impacted futures, the question becomes, “what next”? The vast majority of the influences that will determine which of the possible futures is realized are human induced. We therefore have an enormous opportunity – and responsibility. We can and must choose to act in a way that will take us toward the future we desire. Even inaction (or “business as usual”) is a choice, albeit one that is likely to lead us to a future that many would deem suboptimal.

We hope that this report³ will spark an ongoing dialogue and serve as a catalyst for future collaboration, commitment and action to create the Baltic we seek today, tomorrow and in 20 years. Let us work together and “invent” the future by:

- Recognizing that the basis for our future is dependent on securing ecosystem health, including ecological processes and services;
- Ensuring that governance of the sea is integrated and coordinated, within and between sectors and countries, as well as between agencies and ministries with different mandates;
- Showcasing good examples of leading individuals, industries and institutions who are already taking bold steps to secure and/or invest in a brighter future for the Baltic so we can ‘scale-up’ and make these examples the norm rather than the exception;
- Encouraging, incentivizing and supporting those individuals, industries and institutions who have not yet taken steps to advance but are eager to do so; and
- Acting in partnership to collectively create a bright future for the Baltic Sea.

³ While this report reflects a diversity of inputs, WWF takes sole responsibility for the final content and recommendations.

ACRONYMS

BSAP	HELCOM's Baltic Sea Action Plan	HELCOM	Baltic Marine Environment Protection Commission (or Helsinki Commission)
CAP	EU Common Agricultural Policy	ICT	Information and Communications Technology
CBD	Convention on Biological Diversity	IPCC	Intergovernmental Panel on Climate Change
CFP	EU Common Fisheries Policy	LNG	Liquefied Natural Gas
EF	Ecological Footprint	MPA	Marine Protected Area
EIA	Environmental Impact Assessments	MSP	Maritime Spatial Planning
ETS	EU Emissions Trading System on greenhouse gas emissions	UN	United Nations
EU	European Union	UNHDI	United Nations Human Development Index
MSFD	EU Marine Strategy Framework Directive	WBCSD	World Business Council for Sustainable Development
EUSBSR	EU Strategy for the Baltic Sea Region	WEF	World Economic Forum
GDP	Gross Domestic Product	WWF	World Wide Fund for Nature
GIPSIs	Greece, Ireland, Portugal, Spain, Italy		

POSSIBLE FUTURES FOR THE USE OF THE BALTIC SEA TOWARDS 2030

WWF, with financial support from Trygg Hansa/RSA, initiated this work with Scenarios to create a shared understanding of possible futures for the Baltic Sea. A longer term goal is to secure commitments for action from the public and private sectors to work together toward the realization of our desired future and the sustainable management of this common, valuable but finite resource.

Good scenarios have a theme - a focal question which describes the area of interest and how far into the future they aim to describe. The focal question for this scenario work is: **Possible futures for the use of the Baltic Sea towards 2030.**

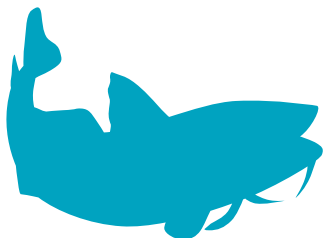
This includes looking at future issues of the sea, as well as social, economic and ecological impacts of the possible uses of the Baltic Sea. The process of developing the scenarios involved participants from most sectors and all countries around the Baltic Sea. The process is described in detail in Appendix 1 – Process.

“We hope that this report will spark an ongoing dialogue and serve as a catalyst for future collaboration, commitment and action to create the Baltic we seek today, tomorrow and in 20 years.”



Photo: Paul Meinman

TRENDS AND UNCERTAINTIES



We may better understand the future by identifying trends that affect our focal question. Some trends may be considered certain, meaning we can be fairly sure about our predictions for future development. Other trends are inherently uncertain, meaning that we really do not know in which direction they will develop within the next 18 years.

Trends and uncertainties provide structure for our exploration of the future.

The scenarios presented here are based on two strategic uncertainties, which we have called “Governance” and “Ecological Footprint”. These are uncertainties that are of high strategic importance in terms of their influence on the usage of and impacts on the Baltic Sea. These are described more in detail in the following chapter.

Informing the two strategic uncertainties which anchor the four scenarios presented here are 10 certain and 7 uncertain trends, identified as we see them in 2012. These are described below in brief.

CERTAIN TRENDS

TRENDS AND UNCERTAINTIES

(according to Oxford Dictionary)

1. a general direction in which something is developing or changing

2. a fashion

Here we define a **trend** as long-term change in society or nature, or within a certain sector of society or nature. A trend can be observed now.

A **certain trend** is a trend whose development into the future we can estimate with some certainty.

An **uncertain trend** (or uncertainty, for short) is a trend of whose future development we don't know. It may evolve in different directions or to different degrees.

1. Maritime spatial planning more widely applied

Various European countries have started to develop maritime spatial planning initiatives. Increased collaboration across the Baltic Sea would lead to maritime spatial planning processes being established in most Baltic Sea countries with legal schemes, including cross-country cooperation and broad public participation. We are certain that this trend is under way, but unsure of its pace or ultimate reach.

2. Increased global demand for energy

Global economic growth in the current system is directly related to rising demand for energy and renewable energy sources. Increasing demand for energy globally is likely to have a correlated effect on energy demand and supply in the Baltic Sea over the coming decades.

3. Increased shipping and marine transport in the Baltic Sea

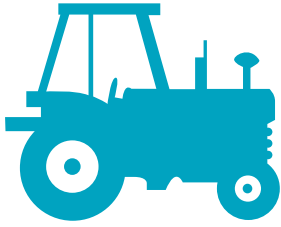
The Baltic Sea is one of the most heavily trafficked seas, accounting for up to 15% of the world's cargo transportation. At any given moment there are more than 2,000 ships afloat in the Baltic Sea. Shipping is projected to double by 2030 and the size of these vessels is also expected to increase substantially.

4. Increased demand for fish and seafood

According to FAO projections⁴, there will be an increase in the demand for seafood products across the 28 countries of the EU between 1989 and 2030. Average per capita consumption is projected to move from 22 kg/caput/year in 1998 to 24 kg/caput/year in 2030, suggesting that net supply will have to increase by 1.6 million tonnes (Mt).⁵ Given that the Baltic represents nearly one third of the countries included in these calculations, a similar trend is likely in this region.

⁴ FAO 2007. *Future Prospects for Fish and Fishery Products. 4. Fish consumption in the European Union in 2015 and 2030, Part 1. European overview. FAO Fisheries Circular No. 972/4, Part 1.*

⁵ *Ibid*



5. Intensified agriculture

Agricultural production is expanding and becoming increasingly focused on efficiency and output to meet consumer demand. Agricultural intensification will impact the Baltic Sea to the extent that discharged phosphorus, nitrogen and other pollutants negatively affect marine ecosystems and contribute to eutrophication.

6. Increased infrastructure in the Baltic Sea

The growing economy in the Baltic region will lead to several new and expanded infrastructure projects in the sea, such as pipelines, power cables, liquified natural gas (LNG) terminals, and a corresponding need for larger ports and perhaps more bridges.

7. Increased coastal activities

The Baltic coastal zones will continue to be exposed to intensive physical exploitation with the most development taking place in or near urban areas. Cities, industries, bridges, dams, coastal defence structures, energy supply systems, summer houses and other types of coastal or offshore development are expected to continue to occupy larger and larger areas, at the expense of “wilderness”.

8. Improved wastewater treatment and waste management

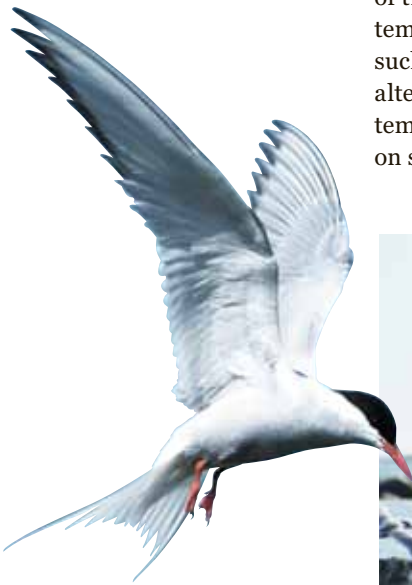
Although wastewater treatment has developed rapidly in the last 5-10 years, many treatment facilities still require updating. Several countries have made large investments to improve the treatment of municipal wastewater and most continue their efforts to improve sewage treatment in coastal community areas.

9. Increased interaction between Russia and the EU

At present, the EU and Russia actively interact and cooperate, primarily for economic and political gain. Levels of collaboration are particularly high in the energy arena. Interaction is predicted to continue to grow, although in which areas is less clear.

10. Increased impacts of climate change

Mitigation of and adaptation to climate change is a global challenge that will require international cooperation and common solutions. Air temperatures in the Baltic Sea region have increased over the past century by approximately 1°C in the northern areas of the Baltic Sea and by around 0.7°C in the southern areas according to the IPCC.⁶ Air temperatures are expected to continue increasing, with increased impact on the Baltic Sea, such as higher water temperatures, more frequent storms and flooding. As the climate alters there are likely to be both “winners” and “losers” in the Baltic Sea area. Increased temperature and precipitation could have a range of impacts, both beneficial and negative, on sectors such as agriculture, tourism, shipping and energy demand.



⁶ IPCC, 2007. *Climate Change 2007: The Physical Science basis*. Cambridge University Press, Cambridge, United Kingdom, 996 pp.110

Photo: Gemund Skjilgen



UNCERTAINTIES

Here we describe the uncertain trends. The titles of these uncertainties may appear to describe a certain development, but we are uncertain either of how the uncertainty will develop (i.e. in what direction); if this is happening at all; or what the effects may be. The uncertainties develop differently in different scenarios, making them crucial for identifying different possible futures.

A short description of what is changing, and some possible outcomes for each uncertainty is provided below.

1. Increased use of sea resources

Governments, companies and others will increasingly explore and exploit the sea and seafloor in the Baltic Sea drainage area, aiming to extract greater profits from the non-renewable resource base. It is uncertain how much, at what rate, in what manner, and with what level of planning or coordination this will occur.

Possible outcomes:

- Resource extraction and use that deplete the natural capital base over the long term; or
- Sustainable handling of natural resources, such that they provide long-lasting benefits into the future.

2. Shift in demand for renewable energy

A significant shift in energy systems is taking place in the Baltic Sea region including a focus on wind, wave and bioenergy. The shift is driven in part by an increase in energy demand, and in part by the EU 20-20-20 directives.⁷ Wind energy in particular is projected to increase massively.

Possible outcomes:

- The increase of renewable energy will be huge, with possible major negative impacts on some sectors, e.g. large scale offshore wind farms affecting shipping and fishing. Some of the pressure from other trends (e.g. climate change, maritime transport accidents etc.) is alleviated; or
- Renewable energy generation grows in a sustainable and careful way, resulting in low negative impacts on most sectors and the environment. Some of the pressure from other trends (e.g. climate change, maritime transport accidents etc.) is alleviated; or
- Demand for renewables grows but in the face of an energy crisis is outstripped by traditional non-renewables (fossil fuels and nuclear).

3. Changing rate of maritime accidents

Shipping traffic in the Baltic Sea is projected to double by 2030. The transport of oil is projected to increase by more than 60%, alongside a projected increase in the transportation of hazardous goods, waste and raw material extraction. Potential pollutants are increasingly handled in ports. Moreover, the shipping sector faces new rules aimed at both avoiding and mitigating the consequences of an accident.

Possible outcomes:

- Many minor accidents – such as shipwrecks, leakage at extraction sources, accidents in ports – result in increasing cumulative negative ecological and economic impacts; or
- One or more major accidents lead to significant environmental and economic devastation; or
- Fewer accidents, and hence less impact on the Baltic Sea due to safer ships and handling in combination with sound management and surveillance.

4. Change in environmental awareness and engagement

Awareness and engagement (public, political, media) regarding the Baltic Sea environment will evolve, shaping political decisions on whether or not to invest in effective and sustainable long-term management.

⁷ EU 20-20-20: A reduction in EU greenhouse gas emissions of at least 20% below 1990 levels; 20% of EU energy consumption to come from renewable resources; 20% reduction in primary energy use through improving energy efficiency.

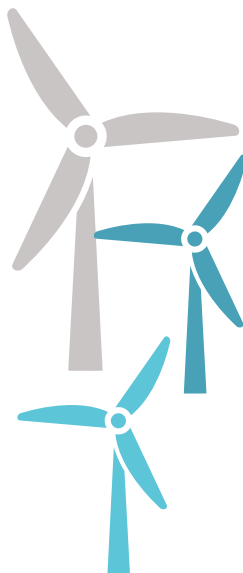
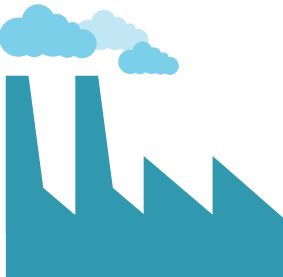


Photo: Futuremagabank.com / Harmu Ala-Hakola

WILD CARDS

"Wild cards" are events that could turn everything upside down. These wild cards are very unlikely, but if they do occur, they will change everything. Potential wild cards are not included in the scenarios, but are worth briefly mentioning. These include:

- A massive oil spill resulting in devastation of marine ecosystems, coastal property and tourism;
- An onslaught of invasive species causing ripple effects on native marine life, fisheries, tourism, etc.;
- A nuclear accident (e.g. on site or even during transfer of nuclear waste); and/or
- Complete global failure in the mitigation of greenhouse gas emissions resulting in a temperature increase way beyond the 2-degree limit.



A massive oil spill resulting in devastation of marine ecosystems, coastal property and tourism is an example of a wild card.

Possible outcomes:

- Decrease in awareness and engagement, resulting in a de facto acceptance of management with short term, environmentally negligent aims and/or unsustainable behaviour; or
- Increase in awareness and engagement, resulting in pressure that rewards management oriented to longer term, more holistic outcomes and sustainable behaviour.

5. Impacts on Baltic Sea ecosystem health

A combination of pressures (climate change, eutrophication, invasive species, overfishing, habitat destruction etc.) is impacting the ecosystems of the Baltic Sea. We do not yet know if the change will be gradual or perhaps trigger a sudden collapse. In either case there will be an influence on the ecosystem services that nature provides.

Possible outcomes:

- Continuous slow deterioration of the Baltic Sea; or
- Sudden ecosystem collapse due to pressure beyond tipping point(s); or
- Gradual improvement and recovery of the Baltic Sea.

6. Shift in the economic paradigm

Resource demand continues to grow as populations and economies expand. Either the current economic system will adapt and prevail, or a new paradigm will come into play as the present system is increasingly challenged. In the latter case, both the demand and the supply sides of the equation will be impacted. Overall consumption could fall, even as demand for more sustainable goods and services grows, while the supply side adjusts to meet or perhaps even stimulate changing consumption patterns.

Possible outcomes:

- Sustainable economic development leading to broad environmental and economic benefits; or
- Business as usual – sponsored decline leading to degraded environments.

7. More sustainable industry

Technology development and regulation are reducing heavy industry in the region. There is a shift towards a service economy and information and communications technology (ICT) increases in importance. Production is being exported to countries with lower labour and input costs and fewer regulations. Old factories close down. Policies and regulations drive investment in environmentally friendly technology thus green tech industry grows.

Possible outcomes:

- Baltic industry becomes sustainable, largely through adopting cleaner practices, and the growth of green tech and knowledge industry; or
- Clutter and confusion lead to fragmented industrial development. There are few clear incentives for cleaning up or changing.



Photo: George Sierra / WWF-Canon

STRATEGIC UNCERTAINTIES

STRATEGIC UNCERTAINTY

A trend whose development within our timeframe is very uncertain **and** whose impact on our focal question is of critical importance.

Two major strategic uncertainties govern our scenarios. One uncertainty is whether in 2030 we will have a more integrated or more fragmented Governance of the Baltic Sea region. The other is whether the Ecological Footprint, a concept used to describe humanity's demands on the Earth's biocapacity, will be high or low. These uncertainties and their possible outcomes are described in this section.

Governance of the Baltic Sea region

Over the last 40 years, governance of the Baltic Sea region could be characterized as “fragmented”: in general, decisions affecting the larger region are made country by country, sector by sector and ministry by ministry. However, in the early 21st century there are trends toward more interconnected governance structures across Europe. This may lead to more integration in the Baltic Sea region.

Examples on the government front include the European Union (EU) Integrated Maritime Policy, the EU Marine Strategy Framework Directive (MSFD), the HELCOM Baltic Sea Action Plan, the EU Strategy for the Baltic Sea Region (EUSBSR), cross-sectoral initiatives on maritime spatial planning and the integration of biodiversity and fisheries policies. On the business side, examples of more integrated approaches to governance include the World Business Council for Sustainable Development (WBCSD), World Economic Forum (WEF) and other structures dealing with the future of business. Several could play a stronger role related to sustainable development in the Baltic Sea region.

Moreover, there are initiatives under way toward closer coordination of policies and institutions both within and between countries, as well as more synchronization of regulations to tackle common challenges. Without such integration it will be difficult to achieve existing targets and there might even be new, conflicting targets set. The EUSBSR could be particularly important in this respect as it provides the only context within which all policies relevant to the health of the sea – and associated areas and population – are addressed. The degree to which this policy is given political weight and attention will determine its relevance. Appropriate indicators and action targets could provide vital checks on the extent to which political actors are prepared to follow verbal commitments with real initiatives, in other words, “walk the talk”.

Yet there are also signs of the potential for even more fragmentation of governance. Countries may tire of waiting for consensus and therefore initiate and implement more nationally focused initiatives which move away from a coordinated and integrated regional approach. Companies may seek to exploit the lack of coordination for their own interests. Thus, the uncertainty is whether the governance of the Baltic Sea will become more integrated or more fragmented in 2030, as measured from a 2012 baseline.



Photo: Konrad Weis

Over the last 40 years, governance of the Baltic Sea region could be characterized as “fragmented”: in general, decisions affecting the larger region are made country by country, sector by sector and ministry by ministry.

Governance of the Baltic Sea

Fragmentation ← → Integration

Below we describe the “history” of the last 18 years, looking backward from a 2030 perspective, imaging what those couple of decades might look like either in the case of a complete fragmentation of governance or in the case of fully integrated governance, and the corresponding implications across the Baltic Sea region.

Fragmentation

The recovery from the financial crisis in 2008–2013 was challenging with wide-reaching implications across all states. It led to serious political disagreements in the Eurozone around 2020, resulting in the collapse of the Euro and a return to national currencies. The rest of the EU political system also suffered from these financial difficulties, but survived. Although the EU umbrella remains, power has devolved significantly from Brussels back to national capitals. Ineffective regional and international governance structures have

forced nations to focus inward, to better address their own needs. This leads to the development of different regulatory systems in the nine Baltic Sea countries. Each prides itself on having effective systems, but the possibility for a holistic regional approach is lost.

Public and private sector ‘users’ of the Baltic Sea are challenged to address the myriad of different regulations and permitting procedures across and even within countries. There is less regional economic and environmental stability, which further contributes to a tenuous economic situation where a few strong nations and corporations benefit at the expense of others.



A mood of collaboration and integration led to a renewed sense of purpose and urgency for tighter integration and collaborative frameworks.

Integration

The system recovered fully after the crisis 2008–2013. The Eurozone emerged stronger after new financial measures were applied across the board and the most indebted countries were supported on a path to equitable growth. Directives issued from Brussels – on the environment and other issues – have had teeth as the real benefits of cooperation have begun to be felt. Meanwhile the EUSBSR provided context and a framework for ‘soft’ measures to respond to the region’s needs and develop its potential. This mood of collaboration and integration led to a renewed sense of purpose and urgency for tighter integration and collaborative frameworks.

In 2030, integration continues between states and industries on the course to developing clear and functional governance for the Baltic Sea. Each state and the bulk of the private sector users of the sea have understood that a healthy Baltic Sea is an invaluable asset and that joint management is required to maintain and improve its quality. This leads to regional and international activities promoting policies that benefit the Baltic Sea, including a commitment to deliver upon existing agreements.

The coherent and cohesive management framework for the Baltic Sea has a positive effect on economic development, leading to a more stable investment climate as well as a greater appreciation for the importance of preserving ecosystem services upon which development depends. Industry and other stakeholders follow clear rules and regulations, leading to a greater public acceptance.

IN 2030

INTEGRATION CONTINUES BETWEEN STATES AND INDUSTRIES ON THE COURSE TO DEVELOPING CLEAR AND FUNCTIONAL GOVERNANCE FOR THE BALTIC SEA



Photo: Kerf



The Living Planet Report is the world's leading, science-based analysis on the health of the planet and the impact of human activity. It relates to the Living Planet Index - a measure of the health of the world's biodiversity.



⁸ For a full description and definition, please see the WWF 2012 Living Planet Report: http://www.panda.org/about_our_earth/all_publications/living_planet_report/ Some of the text here is cited from this report.

⁹ The Beyond GDP initiative is about developing indicators that are as clear and appealing as GDP, but more inclusive of environmental and social aspects of progress. www.beyond-gdp.eu

¹⁰ The phrase "the triple bottom line" was first coined in 1994 by John Elkington, founder of a consultancy called Sustainability. The triple bottom line (TBL) consists of three Ps: profit, people and planet and is intended to measure the financial, social and environmental performance of a company over time.

Ecological footprint

Ecological footprint⁸ is an indicator that measures our impact on nature – the land and sea area required to produce goods and services that we consume and to deal with the waste products of our consumption. Ecological footprint is dependent on what people, organizations, business, and government do. Since the 1970s humanity's global demand on the natural world has exceeded what the Earth can renew in a year.

The uncertainty here deals with changing behaviour in the Baltic Sea region. In the "low footprint" situation, most or all actors change their behaviour to minimize the impact of their activities on the environment. In the alternative case, few take action and there is little engagement in environmental issues, resulting in a higher ecological footprint.



Below we describe the "history" of the last 18 years, looking backward from a 2030 perspective, imagining what those couple of decades might look like either in the case of high or low ecological footprint, and the corresponding implications across the Baltic Sea region.

High ecological footprint

Environmental sustainability is, and has been, low on the agenda compared to economic growth and job creation. There is increased competition for space and resources, and consequently greatly increased pressure on an already stressed environment. Public engagement is low with minimal interest in changing behaviour. There is a growing gap in understanding related to the interdependence of environmental, social and economic health.

"Business as usual" has led to continued ecological degradation. Production continues based on maximizing short term profits, to the detriment of the natural resource base. National accounting systems allow industry to continue to view much of the Baltic's ecosystem goods and services as a free resource. Individual initiatives toward a more sustainable approach to natural resource management have not gained traction or have gone unnoticed.

Other issues (such as global financial scandals, economic difficulties, technological innovation and the latest devices) capture public attention and distract from the environment of the Baltic Sea. Consumption patterns and market-based economic drivers prevalent in 2012 remain unchanged. Individuals are unwilling to alter personal consumption patterns for the sake of the common good, and indeed are largely unaware that there is an alternative approach. Some industries have thrived while others have been negatively affected or even disappeared.

By 2030 we see ecosystem collapse at multiple levels in the Baltic Sea.

Low ecological footprint

An increase in public and industrial engagement on environmental and social matters has led to political and economic pressure and change. Environmentally driven innovation and new green technology have reduced pressure on the Baltic Sea. Economic growth is also environmentally sustainable, although at perhaps a slower rate than what used to be considered desirable. There is a demand for sustainable solutions resulting in, among other things, more effective management of the sea and the factors that affect it. A 'virtuous circle' has been created with consumers and suppliers stimulating each other on ever stronger environmental and sustainability measures.

Environmental, social, and sustainability parameters become an integral part of the new economy. Ecosystem values are much more integrated into national GDP accounting systems, taking the lead from the EU's "Beyond GDP" program.⁹ Businesses are taking a triple bottom line¹⁰ approach, measuring success on combined economic, social, and environmental results.

In 2030 the Baltic Sea is showing signs of ecosystem recovery.

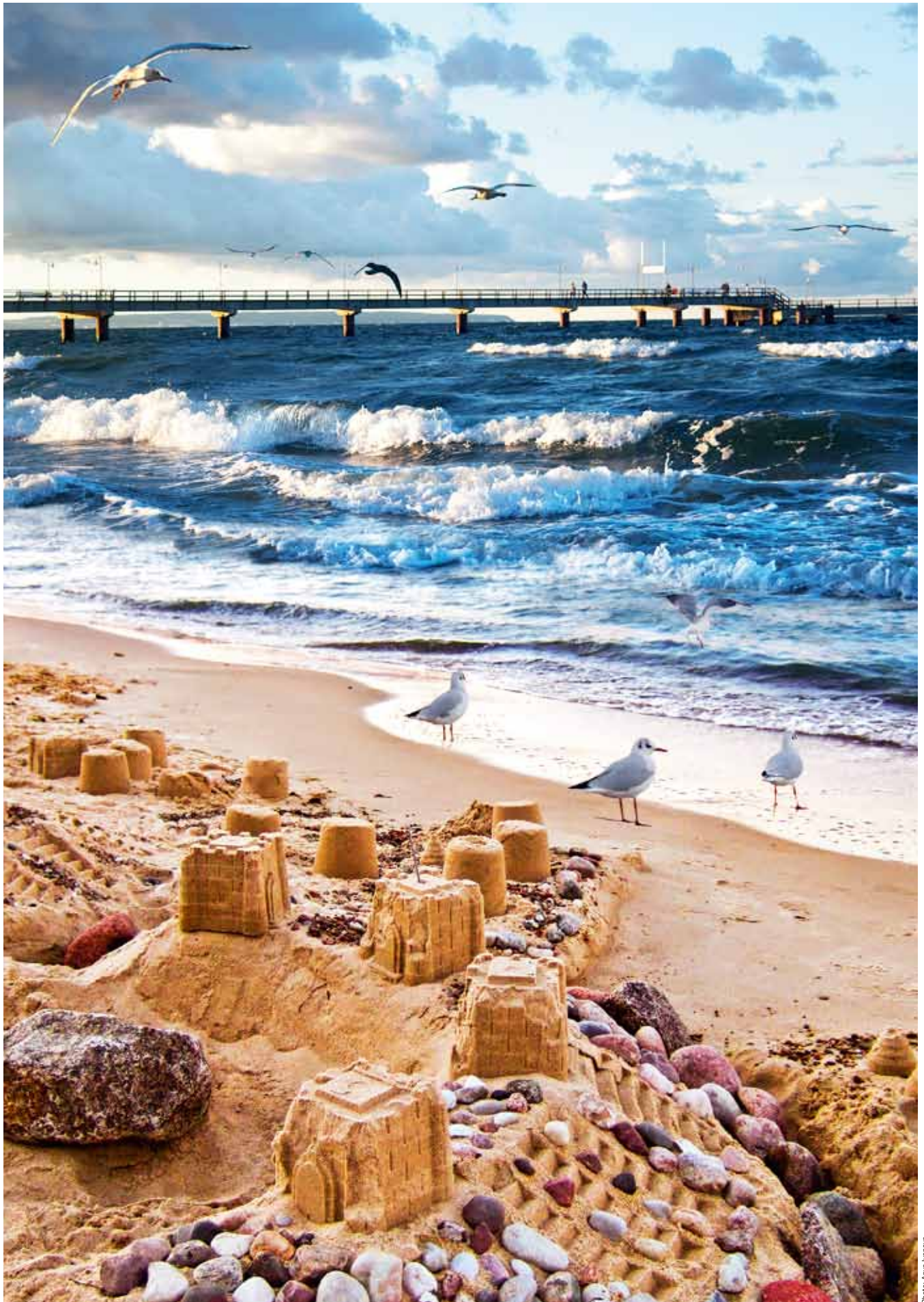
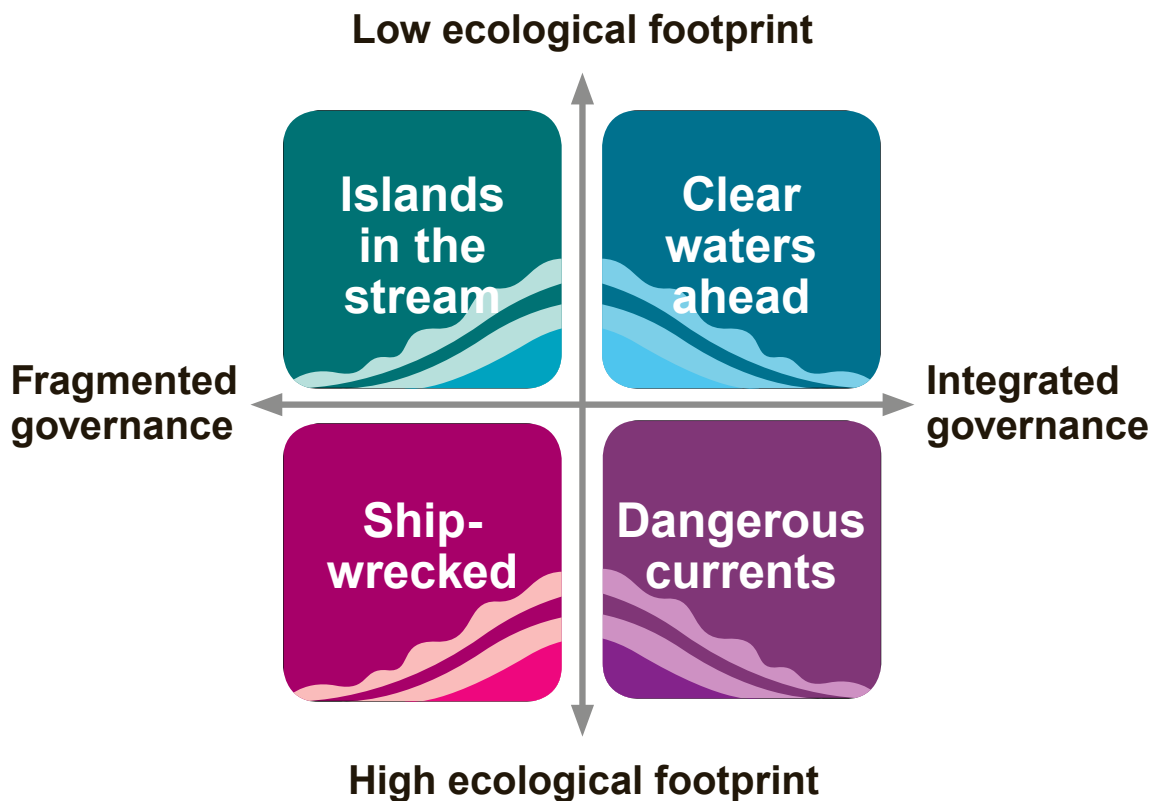


Photo: Anya Ivanova



Photo: Lu-photo

FOUR SCENARIOS FOR THE BALTIC SEA IN 2030



Based on the strategic uncertainties described in the previous chapter four different scenarios have been developed that describe four different situations for the Baltic Sea depending on the path we choose from 2012 forward.

Four scenarios for the Baltic Sea in 2030

Based on the strategic uncertainties described in the previous chapter four different scenarios have been developed that describe four different situations for the Baltic Sea depending on the path we choose from 2012 forward. They are all set in 2030:

Clear waters ahead – strong and integrated governance of the Baltic Sea combined with a society characterized by a low ecological footprint determines the situation in 2030.

Dangerous currents – strong and integrated governance of the Baltic Sea combined with a society characterized by a high ecological footprint determines the situation in 2030.

Islands in the stream – fragmented and weak governance of the Baltic Sea combined with a society characterized by a low ecological footprint determines the situation in 2030.

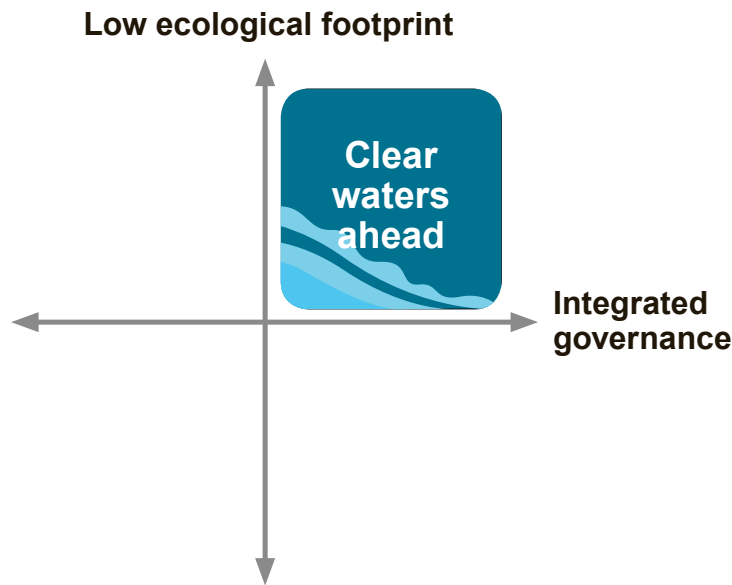
Shipwrecked – fragmented and weak governance of the Baltic Sea combined with a society characterized by a high ecological footprint determines the situation in 2030.

We will now look into each and every one of these scenarios. Please follow us to the year 2030!

CLEAR WATERS AHEAD



Scenario at a glance: High levels of collaboration across and within governments and the public and private sector, combined with an enlightened awareness and acceptance of responsibility for the causes and consequence of ecological footprint, have led to a region that is close to an equilibrium measured against an aggregate of economic, social and environmental indicators. There is a common sense of destiny and empowerment, even in the face of adversity. The Baltic Sea’s ecological resilience has improved slowly from the previous decades of neglect and mismanagement, with species and habitats showing strong signs of recovery alongside a thriving regional economy.



Clear waters ahead

In 2030, nearly fifty years after the fall of the Berlin Wall, the Baltic Sea region has hit its stride. At the celebrated Baltic Sea Summit in St Petersburg in 2021, the nine countries and a council representing the Baltic’s most influential industrial players agreed to enhance regional marine stewardship and governance. Implementation of the ambitious action plan has impacted behaviour at all levels and has started to translate into ecosystem recovery. The restoration of ecosystems and ecosystem services necessary for food, water and energy security, climate change resilience and adaptation have been prioritized. Ecological footprint is minimized and the Baltic Sea is recovering from many years of deterioration.

The Baltic Sea’s ecological resilience has improved slowly from the previous decades of neglect and mismanagement, with species and habitats showing strong signs of recovery alongside a thriving regional economy.

European collaboration and integration was at a threshold around 2015. The financial crisis of 2008–2013 took a heavy toll, particularly for the so-called GIPSI countries.¹¹ Resistance by national partisans to further political integration at the EU level manifested itself in the form of protests and riots. The slow death of ‘old economy’ industries and the relentless march of technology combined to yield a turbulent transition period, characterized by high unemployment and civil discontent. This coincided with a difficult time for the EU politically, linked to the push to decouple jobs and prosperity from GDP.

As the benefits of such changes became more evident, however, the transition gained momentum. The short term approach prevalent in both politics and business throughout much of the 20th century has been replaced by an acceptance that collaboration and cohesive governance are the key ingredients for a holistic development path for the economy, the environment and society.

Successful policy implementations

Prior bilateral commitments for improved natural resource management, through EU and HELCOM, started being implemented around 2015 and are by in large achieved by 2030. The EU took an early lead by providing critical guidance for Member States to effectively

¹¹ Greece, Italy, Portugal, Spain, Ireland

20 PERCENT

OF EACH OF THE BALTIC SEA HABITATS HAS BEEN SET ASIDE IN ECOLOGICALLY COHERENT AND REPRESENTATIVE NETWORKS



Photo: Artur Bogacki

EU '20-20-20' TARGETS

In 2007 the EU's leaders endorsed an integrated approach to climate and energy policy including a series of demanding climate and energy targets to be met by 2020, known as the "20-20-20" targets:

- A reduction in EU greenhouse gas emissions of at least 20% below 1990 levels
- 20% of EU energy consumption to come from renewable resources
- A 20% reduction in primary energy use compared with projected levels, to be achieved by improving energy efficiency

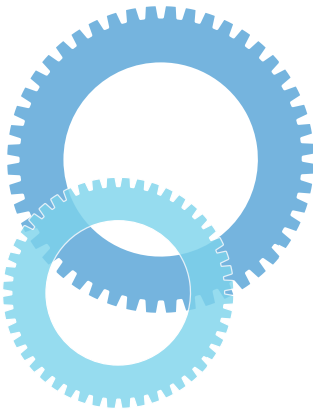
¹² Baltic Sea Action Plan – a joint effort by contracting parties of the Helsinki Commission (HELCOM), including all nine Baltic Sea countries with the European Union, agreed in 2007 to protect and restore the marine environment of the Baltic Sea.

transform and implement European policies into action. The EU's MSFD adopted in July 2008 aimed at achieving or maintaining a good environmental status by 2020 at the latest. A decade later it was adopted as the model for EU-Russia cooperation in the Baltic. The successful EU 20-20-20 energy policy from 2007 delivered real results (although a bit later than planned), and despite slow progress initially, the HELCOM Baltic Sea Action Plan¹² also achieved a majority of its targets and goals.

The launch of the EUSBSR in 2009 and its continued development over the following years provided both a framework for balancing and promoting complementary and competing objectives, and a nexus within which the actors involved could arrive at the agreements necessary to achieve them. The Baltic Sea region, already one of the world's most highly integrated macro-regions, continued to develop new ways in which actors at all levels could pursue common interests while mitigating external pressures, such as pollution and greenhouse gas emissions.

After some years, Russia also saw the urgency for reform and action, and started collaborating in a real sense with EU for regional sustainable development. At sub-national level the Turku Process – supported by the EUSBSR – provided a model and structure within which Russian cities and regions could cooperate with Baltic partners to meet common environmental, economic and socio-cultural challenges.

Jointly developed and more stringent goals and targets were then set across sectors and countries defining the future ambition for the Baltic Sea, including the nature and level of human activities that could fit within the limits of the ecosystem. This ambitious policy did not really get off the ground until 2020. In line with scientific recommendations, 20% of each of the Baltic Sea habitats has been set aside in ecologically coherent and representative networks of well-managed marine protected areas (MPAs). In practice, this has meant protecting about 30% of the entire Baltic Sea area. The debates around this were heated. Gradually though, it became clear even to the most vocal protestors that MPAs have economic and intrinsic value at both national and regional levels in the long run.



A virtuous circle has been created. Coherent governance has had a positive impact on economic and social trends.

A virtuous circle

As the recovery from the 2008–2013 crisis picked up speed, the EU's Beyond GDP program¹³ also took off. One by one, Baltic governments took steps to integrate ecosystem values, income equality, non-market work value¹⁴ and indicators of social well-being into national GDP accounting systems. In a speech made at the EU's 70th anniversary in 2022 congratulating the region for its leadership on this issue, Joseph Stiglitz¹⁵ said “No one would look at a firm's revenue to assess how well it's doing. Far more important is the balance sheet, which shows assets and liability. That is also true for a country – and it is arguably also true for a region as tightly bound as the Baltic.”

Similarly in business, the traditional bottom line approach came to be regarded as too simplistic. The ‘triple bottom line’¹⁶ concept conceived in the late 20th century has now been accepted on a large scale. Thus, environmental, social and sustainability parameters have equal footing as measures of success in the new economy.

A virtuous circle has been created. Coherent governance has had a positive impact on economic and social trends, while improved integration in financial and commercial markets has helped to stabilize the political arena. Citizens have mobilized for improved democracy, resulting in greater transparency in both political and business decision-making. These results have encouraged more citizens to engage and get involved, resulting in a dynamic and empowered civil society.

An interesting parallel development of these improvements in cross-border integration is a redirection of military effort and investment toward the betterment of the Baltic Sea environment and regional economy. All Baltic states cut military budgets, and what remains tends to be focused on international peace-keeping and/or regional cooperation activities such as coast guards, enforcing marine protection regulations, monitoring, surveillance, science and so forth. In short, the military is interacting far more with nature conservation on a regional basis.

Flow of information for sustainable innovation

The increasing flow of information through the internet has been unstoppable. ‘Big Data’ was the term coined in 2009 to describe the increasing availability of information via the Internet. Now, some 20 years later, Big Data has been combined with crowd sourcing and radical transparency to become Crowd Info, and the internet has been replaced by the “datasphere”.¹⁷ People can keep better track of much that governments or organizations do making corruption and activities causing social and/or environmental harm harder to hide.

Much of the social-ecological innovation in the region has been driven by a huge upsurge in green crowd-funding platforms. The potential and the motivation for new sustainability approaches accelerate, raising profit margins, and stimulating more positive competition within the environmental sector. Low footprint industries create new job opportunities even as old businesses close down.

Industry experiences increased efficiency, thanks to better sharing of innovation across borders. One example is the wastewater treatment technology originating in Finland that has been distributed across the region and contributes significantly to pollution reduction in the Baltic Sea. In the case of shipping, effective monitoring and surveillance systems have been important to reducing footprint, while stricter regulations on working conditions on vessels have resulted in fewer accidents caused by human error.

The shift toward a more service and knowledge-based economy has continued its rapid transformation over the past 30 years. This represents the coming together of new coalitions such as the wind industry, fishermen and conservationists. High global demand for raw materials from 2010–2015 led to the opening of a number of new mines. Yet green



Wastewater treatment technology originating in Finland has been distributed across the region and contributes significantly to pollution reduction in the Baltic Sea.

¹³ The Beyond GDP initiative is about developing indicators that are as clear and appealing as GDP, but more inclusive of environmental and social aspects of progress. www.beyond-gdp.eu

¹⁴ E.g. volunteerism and parenting.

¹⁵ Adapted from http://www.beyond-gdp.eu/key_quotes.html

¹⁶ The phrase “the triple bottom line” was first coined in 1994 by John Elkington, founder of a consultancy called Sustainability. The triple bottom line (TBL) consists of three Ps: profit, people and planet and is intended to measure the financial, social and environmental performance of a company over time.

¹⁷ Hamilton, Peter, 2002, “Misspent Youth”.



Photo: Pureline / Nordicphotos

technological innovations focused on efficiency, recovery and recycling helped to mitigate the negative environmental impacts of these ventures and – more importantly – led to a reduction in demand altogether. By 2022, Baltic industry had created a niche for itself selling knowledge in cradle-to-cradle¹⁸ innovation and systems engineering. In 2030, this sector as well as information and communications technology (ICT), financial services, and tourism are booming.

Massive expansion of renewable energy

Renewable energy systems have soared, thanks to EU’s 20-20-20 initiative in combination with extensive financial incentives. There are numerous new and expanded wind energy parks, offshore and on land. Solar energy and geothermal systems are taking strong shares, both for private homes and large-scale applications. Bioenergy also plays a vital role, especially in forest rich countries like Russia, Finland and Sweden. A substantial (although not total) phase out of fossil fuels is planned for the medium term as sustainable biofuels have gained large market shares as a substitute.

The majority of the old-fashioned electricity generation systems from the last century have been phased out, not least the Russian and Swedish nuclear plants. The new Finnish nuclear plants were not started until 2021, after many years of delay, additional expense and reconstructions. Still the nuclear waste problem has not been fully solved and the government is under pressure from its citizens and its neighbours to keep new nuclear investment to an absolute minimum and start planning a phase out of existing plants.

Some warned that the massive expansion of wind parks might increase pressure on the sea and sectors such as fisheries and tourism. Fortunately, an ecosystem-based, regional maritime spatial planning process involving a diverse cross-section of stakeholders has helped ensure that economic and environmental concerns, as well as the needs of other ‘users’, have been considered and an integrated “win-win” management regime has been instituted.

¹⁸ The phrase “cradle to cradle” was coined by Walter R. Stahel in the 1970s. The present model is based on a system of “lifecycle development” initiated by Michael Braungart and colleagues at the Environmental Protection Encouragement Agency in the 1990s. In 2002, Braungart and William McDonough published a book called “Cradle to Cradle: Remaking the Way We Make Things.”

IN 2030

FINANCIAL SERVICES AND
TOURISM ARE BOOMING



Photo: Eugenio Susto

HELCOM CLASSIFICATION

HELCOM now classifies 11 of the Baltic Sea Basins as having good ecosystem health status compared with 2012 where only 3 areas were classified as having 'moderate' status.



IN 2015

THE SYSTEM OF ANNUAL FISHERIES QUOTAS USED IN 2010 WAS REPLACED BY MULTI-ANNUAL PLANS



Environmental engagement – enlightened self-interest

Official recognition of the implications of climate change is clear and explicit, resulting in the prioritization of adaptive measures to minimize negative impacts. Among other things, significantly more money and effort is diverted to underwater surveys to bolster the informational basis for decision making at all levels.

Society's environmental engagement is high, and often referred to as 'enlightened self-interest'. Living in a sustainable manner brings status, in much the same way that wearing designer labels and driving fancy cars did a couple of decades ago. This is a long-term trend, profiting businesses which have tapped into shifting consumer demand. Social media has had great impact in this process, rewarding sustainable behaviour choices and making examples of the wasteful and the gluttonous.

The demand for sustainable products has spawned a plethora of successful green labels causing many of the biggest shipping companies to go well beyond compliance to satisfy their customers. The tourism sector has shown a general increase with "eco-friendly" operations demonstrating the biggest market share.

Eating habits have also changed, with people focusing on quality over quantity, particularly when it comes to meat and dairy products. In fact, agriculture around the Baltic Sea has started to be transformed. Although Poland and Denmark resisted in the beginning, tough negotiations led to agreement and implementation of measures to substantially reduce agricultural nutrient run-off. Some farmers are still complaining about tough regulations and high standards, others are applying a more selective approach to fertilizer and pesticide use. Technology driven farms keep improving their low-impact methods. Farmers are slowly but surely meeting the ever-increasing consumer demands for organic and locally grown products and prices are slowly falling.



Photo: Stellan Rosenhagen

Fish and fishing

As temperatures have warmed there has been an increase in rainfall and riverine flow in the northern Baltic Sea, accompanied by a reduction in algal growth. The opposite has happened in the south but there a change in salinity has been observed. Freshwater species are expanding, and through careful management the rebuilding of marine species has accelerated since 2010 and are showing signs of stability in their populations.

The system of annual fisheries quotas used in 2012 was replaced by ecosystem based multi-annual management plans in 2015. This benefited both the fishermen and the ecosystem and greatly facilitated integrated planning and management with other sectors.



Although eutrophication is a persistent challenge, fish populations have rebounded somewhat. Baltic marine mammals, including the harbour porpoise, are experiencing a comeback.



Photo: Björn Steffansson

When the multi-annual plans were first implemented, fishing levels decreased in the region. They then settled at a lower equilibrium, which has ensured the stable fish populations and a healthy, largely subsidy-free fishing industry that the region now enjoys.

IN 2030

THE BALTIC SEA IS A
GLOBAL SHOWCASE OF
HOW INTEGRATED
ACTION AND REGIONAL
GOVERNANCE CAN MAKE A
DIFFERENCE

Environmental impact

Thanks to increased protection, many organisms and ecosystems of the Baltic Sea have started to demonstrate increased resilience. Although eutrophication is a persistent challenge, fish populations have rebounded somewhat. Baltic marine mammals, including the harbour porpoise, are experiencing a comeback.

With improvements in wastewater treatment and more stringent pollution regulations and enforcement, hazardous substances are gradually being flushed out of the marine environment. The Baltic-wide surveillance systems for the transport, use and production of hazardous substances keep track of new and emerging substances, and methods have been developed for dealing with spills. In fact, HELCOM's 2020 zero-emission target for hazardous substances across the whole Baltic Sea catchment area was surprisingly effective, although with a slight delay. The real change came after the St. Petersburg summit in 2021, when all nine countries decided to move from talk to action.

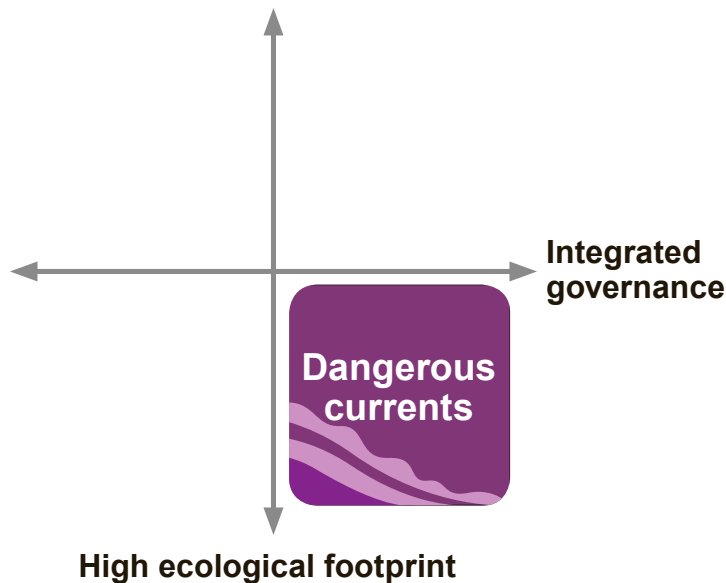
Now, in 2030, the Baltic Sea is a global showcase of how integrated action and regional governance can make a real difference.



Photo: Bernard Richter

DANGEROUS CURRENTS

Scenario at a glance: Governments and companies have taken seriously their commitments and responsibilities to work together, recognizing the mutual gains to be had from collaboration. Yet this does not extend to the environmental sphere. The economic model of the late 20th century continues apace, treating environmental goods and services as externalities and measuring both corporate and national success on short term indicators. Ecosystem collapse has occurred on several fronts and more is imminent.



THE EU 20-20-20

**POLICY WAS ADOPTED,
BUT GOVERNMENTS
DID NOT HONOUR THEIR
RHETORIC BY MAKING
THE INVESTMENTS IN
RENEWABLES NEEDED
TO DELIVER UPON THESE
TARGETS.**

Dangerous currents

Twenty-five years ago, environmental issues were on the political and media agendas. But the climate summits in Copenhagen and Cancun in 2009 and 2011, respectively, and the Rio+20 Conference on Sustainable Development in 2012 all failed to deliver anything substantive. This was in stark contrast to the strong action plan signed off at the conference of parties to the Convention on Biological Diversity (CBD) in Nagoya in 2010. But governments were losing both the mandate and the will to be the necessary agents of the change required to demarginalize the environment in the serious business of running the world.

The global financial meltdown of 2008–2013 left several European countries in a terrible social and economic state. The European political system as a whole struggled to keep itself and its members afloat. This took a great deal of effort, diverting attention from topics seen as ‘secondary’ such as the environment and certain social and cultural programs. The Euro narrowly survived as a currency largely thanks to an acknowledgement of the need for an integrated approach to policy development and implementation across the region.

The countries around the Baltic Sea were, of course, affected by this turmoil. So much focus on Southern Europe – how would the North survive? The solution was more collaboration and more integration of policies and governance. Moreover Russia, after significant internal turbulence in years leading up to 2020, started to turn more toward the EU as well as toward greater transparency and civil society engagement.

Now, in 2030, the Baltic Sea countries have hit their stride on collaborative action. Economic growth and prosperity have boomed, according to the old-fashioned measure of GDP (coined by Simon Kuznets in 1937, nearly a century ago). A high GDP, to the exclusion of environmental and social measures indicators of “health”, continues to be the central measure of government success. Interest in the environment is low. The adherence to 20th century patterns of consumption has led to an ever-rising ecological footprint and increasingly dire consequences for the Baltic Sea and its inhabitants.



As a result of these trends, nearly every aspect of the ecological footprint – carbon, cropland, grazing land, forest, built-up land and fishing grounds – has sustained further pressure in every one of the nine Baltic countries.

Focus on the low hanging fruits

Following the recession of 2008–2013, economic growth and stability have been the main drivers for the countries around the Baltic Sea. The launch of the EUSBSR in 2009 was intended to focus on four main areas: environment, economy, accessibility and security. It was meant to be a framework for balancing and promoting complementary and competing objectives in all of the above fields. In fact, resources were dedicated to economy, access and security while ‘environmental sustainability’ became an empty term, repeatedly co-opted by interests benefiting from the status quo in a near-universal greenwash.

Progress made on environmental fronts in a number of agreements and international meetings in the early years of the 21st century stalled. The political will behind the words was weak and insufficient to counter the strong voice of the short-term interest groups. The EU 20-20-20 policy was adopted, but governments did not honour their rhetoric by making the investments in renewables needed to deliver upon these targets. Various paper commitments to secure a more environmentally sustainable growth trajectory sit on shelves gathering dust. The EU’s regional influence remains strong but their environmental influence has been marginalized to the point of irrelevance.

As a result of these trends, nearly every aspect of the ecological footprint – carbon, cropland, grazing land, forest, built-up land and fishing grounds – has sustained further pressure in every one of the nine Baltic Sea countries. With the exceptions of Denmark and Finland who were at 4th and 11th place respectively in 2012, all Baltic Sea countries have crept up the rankings of ecological footprint over the past two decades, consuming increasingly more than their ‘fair share’ of the planet’s resource base.

Blue growth and extraction

Blue growth¹⁹ has become the catch phrase for a “bigger, better, faster” approach to maritime development. The original concept of balancing out the economic, environmental and social prerogatives, and identifying synergistic ways of harmonizing the needs of all sectors has given way to a more laissez faire attitude. Some have given up hope of ‘saving’ the environment, others continue to insist that it will right itself in a new market-based equilibrium, that human technical prowess can adapt as it always has.

Blue growth has become the catch phrase for a “bigger, better, faster” approach to maritime development.



Photo: Nicklas Liljegen / Sjofartsvärdet

¹⁹ “Blue growth” is a long-term strategy to support growth in the maritime sector as a whole. It aims to identify and tackle challenges (economic, environmental and social) affecting all sectors of maritime economy, highlight synergies between sectorial policies, study interactions between the different activities and their potential impact on the marine environment and biodiversity, and identify and support activities with high growth potential in the long term. Source: http://ec.europa.eu/maritimeaffairs/policy/blue_growth/index_en.htm

The 7 km Saaremaa Bridge is Estonia's pride and joy, and the shiny new 19 km Fehmarn Belt Bridge between Denmark and Germany is also in operation.

Conceptual design bridge, Femern AS.
Photo: Dissing, Weitting



IN THE MID-2020s

THE MARKET FOR SEAFOOD PRODUCTS HAS GROWN EXPONENTIALLY DESPITE THE DECLINE IN FISH STOCKS

INCREASED GENERAL CARGO AND CONTAINER TRAFFIC

General cargo and container traffic managed by Baltic ports grew by 64% by 2020. The number of ports remains constant at 2012 levels, but existing ports have been greatly expanded.

Investments are directed toward techno-solutions to environmental problems such as desalination, carbon storage, gene banks, etc – addressing symptoms rather than root causes.

The market for seafood products, especially farmed species, has grown exponentially in the mid-2020s, despite the decline in the world's fish stocks. The seafood processing industry in the Baltic region has increased their import and reliance on the global seafood market, mainly consisting of farmed predatory fish and wild-caught lower trophic fish and crustaceans. Trade within the Baltic Sea countries is predominantly for fish species used for fish meal and fish oil. Government incentives were set in place to promote the development of aquaculture in the Baltic Sea to offset the limited catch rates of commercial fish stocks and to boost coastal economy and communities along with an effort to diminish the heavy reliance on imported seafood. Consequently, the fishing industry has declined significantly with many fishermen selling their vessels to invest in other activities.

There has been a massive growth in the shipping sector during the last decade, largely due to the expansion and construction of oil terminals on the shores of the Gulf of Finland. Capacity shortages were most severe in the ports located along the German coast and the Gulf of Finland but this is compensated for by alternative regional transport linkages. Of course this comes with the cost of increased spillage of oil and other hazardous substances.

The 7 km Saaremaa Bridge is Estonia's pride and joy, and the shiny new 19 km Fehmarn Belt Bridge between Denmark and Germany is also in operation. The bridges prompted great debate, not least about the environmental impact. They have, in fact, made transportation much faster and easier but their full environmental impacts are yet to be determined.

Integration spurs development

There is no question that an integrated approach to governance across the 9 countries and the meaningful engagement of industry in this process has prompted economic growth in most parts of the region. Among other things, it has led to a streamlining of projects, including 'green' ones such as wind farms. Yet closer integration in the absence of an enhanced commitment to sustainability has also led to the accelerated decline of the resource base upon which this growth ultimately depends.



Eutrophication with yearly algal blooms and expanding dead zones, overfishing, pollution by hazardous substances and the subsequent loss of biodiversity have prevailed.

Competition from Asia and Africa has spurred the countries around the Baltic Sea to join forces for research and innovation. Only by focusing on knowledge creation can the region survive in a fierce global competition. This has led to a number of new technological inventions. One green example is a second generation smart electricity grid, in combination with new systems for monitoring and regulating electricity consumption, also for private homes. In general though, without the stimuli of either official incentives or consumer demand, green tech innovation lags behind.

Someoneelism

Although environmental awareness is high, the incentive to actually take personal responsibility and act to reduce one's own ecological footprint remains low. Incomes across the Baltic Sea countries are rising, but 'quality of life' is still narrowly defined by access to consumer goods. Consumerism is the persistent and pervasive religion. A healthy marine environment is of little interest – it's someone else's problem, and someone else is responsible for cleaning it up.

As the demand for eco-friendly products (e.g. farmed foods, sustainably harvested fish and timber products, recycled materials) is relatively low, focus is instead on low prices. Subsidies continue to drive intensive agriculture in a well-integrated market, with large conglomerates combining farming with the rest of the food production chain. Small-scale and organic farmers were largely driven out by the early 2020s.

In the sea, eutrophication with yearly algal blooms and expanding dead zones, overfishing, pollution by hazardous substances and the subsequent loss of biodiversity have prevailed. Several technical measures were tried in an attempt to address the consequences of eutrophication. But the huge wind-driven oxygen pumps, the large scale mussel cultivation and the expensive attempts to remove algae biomass failed to provide relief due to the scale of the problem, high costs, and low effectiveness. There have also been various attempts using aquaculture to cultivate herbivorous Baltic fish for human consumption, but this new approach has met with reluctance on several levels and not yet taken off.

Most travellers avoid visiting the Baltic Sea when the algal blooms make being on the water nearly unbearable. The number of pristine areas, sought after by the travelling public is dwindling slowly but surely. Industry observers forecast a downturn in nature tourism in the coming years, as the exclusive spots become reserved for the few who are able to pay top dollar for the privilege of enjoying what was once a common resource.

Most travellers avoid visiting the Baltic Sea when the algal blooms make being on the water nearly unbearable.



Photo: Valery Shamin

Nuclear energy became a more attractive proposition following the long awaited commercialization of fourth generation ‘fast breeder’ technology. Memories of the accidents in Fukushima and Chernobyl have faded into history.



Photo: Artsiom Kireyau



Photo: Nord Stream AG

Another main regional project is Nord Stream, that 20 years ago joined the gas industries of Russia and Germany. Two more pipelines have been added, one in 2015 and the most recent one in 2029.

Energy industry is booming

The demand for energy continues to grow. EU Member States succeeded in producing 20% of their total electricity demand from renewable sources by 2020 but have not got much further. Although oil has become more scarce and expensive, other fossil fuels are still abundant, especially natural gas from Russia. The drilling for oil and gas in the southern Baltic Sea is still under way. Governments in Sweden, Latvia, and Lithuania are discussing how to handle the seabed southeast of Gotland, which is estimated to hold large amounts of oil. A decision is expected in 2033. In the face of a looming energy crisis, it seems that renewables may be outstripped by fossil fuels and nuclear.

Nuclear energy became a more attractive proposition following the long awaited commercialization of fourth generation ‘fast breeder’ technology. Memories of the accidents in Fukushima and Chernobyl have faded into history. Sweden, which had decided to phase out its nuclear production, has now rethought: old reactors have been replaced and new ones are in the plans. Completion in Scandinavia of two more large-scale underground storage facilities for nuclear waste were acknowledged worldwide as contributing to solving the waste challenge but such facilities have not been able to keep up with output. Nuclear waste is a growing problem. Much is transported on ships through the Baltic Sea but the risks are largely ignored.

Back in 2012, the Swedish newspaper Dagens Nyheter reported that Iceland, Norway, Latvia, and Sweden had the highest global shares of renewable energy. The development of renewables has continued since, with emphasis on cost reduction, security of supply, and energy independence (as opposed to environmental concerns). Where renewable energy is utilized, it is often in an unsustainable way, increasing the pressure on natural ecosystems.

Countries around the Baltic Sea have focused on collaboration in this matter. One example is the Baltic Ring electricity grid, which is in full operation with second-generation smart grid systems providing for full integration of a common Baltic electricity market. Another regional project is Nord Stream, which 20 years ago joined the gas industries of Russia and Germany. Now, backed by a general enhancement of EU-Russia collaboration, two more pipelines have been added, one in 2015 and the most recent one last year, in 2029.

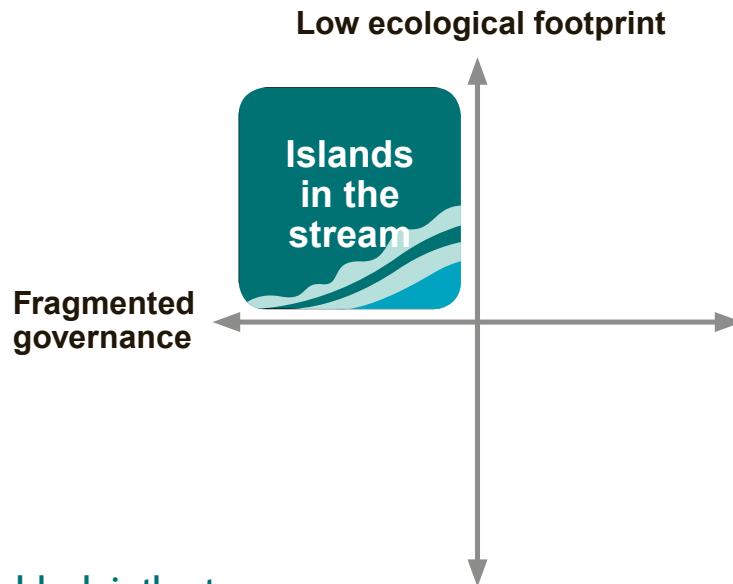
Although collaboration and integrated governance has increased around the Baltic Sea, the sea itself has not benefited. Eutrophication, fish stock depletion, bioaccumulation of hazardous substances and other environmental impacts due to increased ecological footprint remain threats to the sea.

ISLANDS IN THE STREAM



Photo: Dainis Cierpis

Scenario at a glance: The web is the greatest resource and connector between the Baltic countries today. Due to several failures in cooperation, shifting foci and pressure from external sources, Baltic Sea governments have lost the will to negotiate and collaborate. Without their leadership, regional sectoral initiatives have also largely dissolved. Yet at the individual level, people and companies have taken up the clarion call for “one planet living”. This has made some positive impact on the state of the Baltic Sea environment, but it is simply not enough.



40 YEARS

AFTER THE FIRST UN RIO CONFERENCE DECREASING ECOLOGICAL FOOTPRINT AND REDUCING GREENHOUSE GAS EMISSIONS HAVE FINALLY GAINED SOME TRACTION

Islands in the stream

Almost 40 years after the first UN Rio conference on environment and development, investments in environmental protection, decreasing ecological footprint and reducing greenhouse gas emissions have finally gained some traction. Although many hoped for governments to take the lead, it was in the end action by individuals, private corporations and civil society that led the way.

The signs of environmental degradation and its connection to human activity – or the dawn of the Anthropocene Era²⁰ – became increasingly clear to people in the beginning of the 21st century. The storms, the flooding, and other natural disasters came more frequently and with increasingly destructive impacts. Despite this, governments failed both in Copenhagen in 2009 and Cancun in 2011 to find a common solution for climate change. Any remaining hope in government leadership was dissolved by the weakness of the outputs from the Rio +20 conference on sustainable development in 2012.

The storms, the flooding, and other natural disasters came more frequently and with increasingly destructive impacts.



Photo: Arvydas Knuk

²⁰ <http://ngm.nationalgeographic.com/2011/03/age-of-man/kolbert-text>



Photo: Shatamov / BlueOrange Studios

‘Soft values beat hard cash’ has become the Baltic region’s motto for the second quarter of the 21st century. The previous emphasis on material possessions has shifted in the direction of human welfare – personal health, natural values and connection with other people.

The hopes for Baltic interstate agreements and collaboration also fell through soon afterward. The absence of high-level political will and leadership prompted multiple movements among local community groups toward small-scale green initiatives whose reach eventually became all encompassing. These initiatives have different focus and diverse impacts: the picture is not of one, but many.

Thanks to the proliferation of these local efforts over the last twenty years, there are some signs that we are moving in a positive direction with respects to resetting the balance between economic, ecological and social priorities.

Direction towards a new economy

From 2015, faith in the ability of international and regional institutions to deliver progress suffered a steady decline. Countries began to act independently and bilaterally to achieve change more quickly. Progress has been patchy depending to some extent on the national politics and the level of public and industry pressure, but slowly, as a result of pressure from civil society, the traditional use of GDP as a measure of national wealth or success was – and still is being – replaced.

New measures for development and living standards were suggested in the late 20th century. Slowly measures such as the UN’s Human Development Index (HDI²¹), Gross National Happiness, and ecological health as measured by both levels of human impact (ecological footprint) and biodiversity health (Living Planet Index²²) have become mainstream. Finland was an early adopter in the Baltic context. Today the environmental and social costs of business are now largely accounted for using triple bottom line approaches²³, although different standards and systems across countries and industries make it somewhat difficult to compare.

Soft values beat hard cash

‘Soft values beat hard cash’ has become the Baltic region’s motto for the second quarter of the 21st century. People have redefined what they want from life. The previous emphasis on material possessions has shifted in the direction of human welfare – personal health, natural values and connection with other people.

This trend took off with a massive media campaign led by a Polish billionaire entrepreneur, launched on his 50th birthday in February 2016. He produced a film focused on the benefits of changing our values, which became a surprise hit. The film went instantly viral and was an important catalyst for a greater awareness about the downside of consumerism. The insight on how mass consumption is damaging to the environment was broadly and successfully communicated and, as a result, the rate and volume of consumption of goods is now shrinking.

Environmental awareness is strong at grassroots level

Civil society has increased their engagement in the Baltic Sea, through campaigns and knowledge sharing fuelled by social media and, often in cooperation with industry. Environmental awareness and engagement are thus building at the grassroots level with a rising demand for ecological goods and services. Many people have also significantly reduced the amount of red meat and dairy products in their diet. Grocery shopping is an intellectual exercise for those wishing to make an environmentally conscience choice as there is confusing variety of environmental labels and systems to consider and little government oversight or guidance.

Patience is required: the lack of sustained enforcement of regulations and policies makes the process toward systemic sustainability very slow in general. Some industries lead the way, but laggards exist, and they are not encouraged by either positive or negative incentives on the part of governments. This is also true of the EU. After the financial crash in 2008 and the challenges of saving the Euro from 2012 onward, the EU lost its focus on ecological issues and never really recovered. There is no longer a clear common agenda for regional collaboration, beyond simply keeping the EU together.

In this vacuum, local and national initiatives have increasingly focused upon securing a better quality of environmental management, protection and climate change mitigation. The efforts and initiatives are fragmented, but the public is engaged and many businesses are trying hard.

²¹ Human Development Index, see <http://hdr.undp.org/en/statistics/hdi/>
Gross National Happiness, see: <http://www.grossnationalhappiness.com/>.

²² Ecological Footprint and Living Planet Index, see: http://wwf.panda.org/about_our_earth/all_publications/living_planet_report/

²³ The phrase “the triple bottom line” was first coined in 1994 by John Elkington, founder of a consultancy called Sustainability. The triple bottom line (TBL) consists of three Ps: profit, people and planet and is intended to measure the financial, social and environmental performance of a company over time.

In this vacuum, local and national initiatives have increasingly focused upon securing a better quality of environmental management, protection and climate change mitigation. The efforts and initiatives are fragmented, but the public is engaged and many businesses are trying hard.



Photo: Ole Jensensten

IN 2022

THE STOCKHOLM +50 MEETING WAS HELD IN CELEBRATION OF THE FIRST GLOBAL ENVIRONMENTAL CONFERENCE

Multiple local actions

In 2022, the Stockholm +50 meeting was held in celebration of the first global environmental conference. The meeting focused on coordinated actions to promote sustainable development. Soon after, a number of local initiatives were launched by municipalities to lessen human impact on the ecosystem. A coalition of 10 cities in the Baltic region took on a large share of responsibility for driving new environmental initiatives, including setting up a fund to provide support for new technology and creating a platform for knowledge sharing. This has been a good example of how fragmented initiatives can have impacts at a larger scale.

Allocation of space in the marine environment continues on a sector-by-sector basis at the national level, much as it did throughout the 20th century. Nobody has the full picture of potential conflicts, synergies or what the ecosystem can sustain. Often an environmentally positive decision taken in one place is counteracted by an equal and opposite decision elsewhere. For example, ten years ago the plans for designating an 'Associated Protected Area' in a shipping lane in the Gulf of Finland failed due to pressure from Russia, who considered this area critical for the transport of oil.

Fish stocks have stabilized at low levels. The system of regional fishing quotas broke down 15 years ago and every country manages its waters independently of their neighbours. Industry survival means taking individual responsibility as common regulatory systems and surveillance have fallen away. Some fishing associations took a progressive role in finding new solutions to tackle the old problems. In localized areas, for example, the fishermen themselves have come together to find ways of regulating collective, take through transferable fishing concessions (rights or shares to quotas).

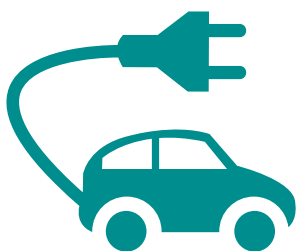
The plans for designating an 'Associated Protected Area' in a shipping lane in the Gulf of Finland failed due to pressure from Russia, who considered this area critical for the transport of oil.



Photo: Olexsandr Kalinichenko

BY 2030

SOME TWO-THIRDS OF THE 73 POLLUTION HOT SPOTS ON HELCOM'S 2010 LIST OF POINT POLLUTERS OF HAZARDOUS SUBSTANCES HAVE BEEN DELETED FROM THE LIST



Most countries focus on producing energy with the lowest possible environmental impact. A number of initiatives for biofuels, electric vehicles and so forth have been taken.

Another great initiative was first launched by forward-looking young fishermen in Finland. Shifting their fishing effort away from endangered species such as cod, and instead targeting under-harvested species such as bream and roach, they found highly receptive export markets in Russia and other Baltic Sea countries. Taking care to manage their extraction sustainably, other groups of fishermen in Lithuania, Latvia, Estonia and Poland have since picked up the model and inadvertently shifted their compatriots' palates and eating habits by putting previously unconsidered fish on the table.

Many farmers have followed the "green-wave" trend and responded to the increased demand for eco-friendly products. A number of certification schemes have been developed, and the farms that profit from these work as good examples to other farms in the region. But there is much variation across the farms and many problems are still to be solved as profit-maximizing guidelines are widely spread. In some areas, a more industrial type of farming has concentrated.

Eutrophication is still a major threat to the Baltic Sea. While some discrete actions are taken by individual actors to reduce nutrient runoff in some countries, joint and co-ordinated international actions are still missing.

The expanding tourism industry is one powerful driver for nature conservation in some marine areas. Many tourists who enjoy nature and have environmental interests are now arriving to the region to explore the Baltic Sea's unique landscapes and experience many different activities. The tourist industry recognizes this and has set up a range of initiatives in collaboration with civil society, local governments and anyone who will partner with them to invest in the places that they see as their strongest revenue generators.

By 2030, some two-thirds of the 73 pollution hot spots on HELCOM's 2010 list of point polluters of hazardous substances have reduced their output and been deleted. However, there are still 23 hotspots left – most municipal or industrial in nature – which still have not been addressed adequately and are unlikely to be dealt with at the local or national level, given the specific political contexts.

Energy and technology development

Energy demand has fallen by 14%, compared to 2005, due to a combination of increased efficiency and high energy costs. Renewable energy, in particular, is in high demand across all the countries. However, natural gas from Russia remains a main energy resource.

A number of initiatives for biofuels, electric vehicles and so forth have been taken. EU Member States succeeded in producing 20% of their total electricity demand from renewable sources by 2020 but did not get much further. No new goals were agreed to replace and build upon the 20-20-20 package.

Large-scale development of region-wide grid systems that could be far more efficient are moving forward slowly and patchily. Such infrastructure requires the collective political will that has simply disintegrated since the opening years of this century.

Significant efforts are invested in finding new technological green solutions. All of these must be privately funded, however, as there are simply no governmental financial support or regulations pushing this development forward.

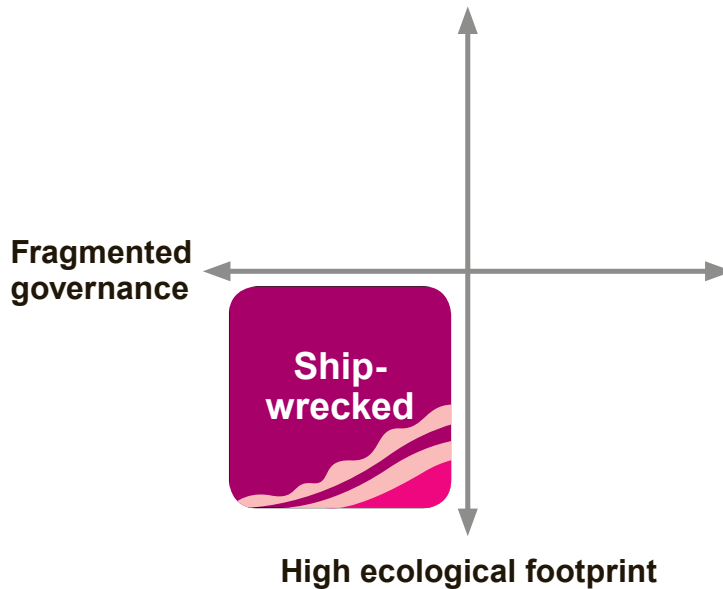
All in all, the decline in ecological resilience of the Baltic Sea has come to a halt. There is great potential for the future development and quality of life of the region thanks to the good intentions of individuals, communities and private initiatives. The lack of international coordination and collaboration, however, makes the transition harder and slower.

SHIPWRECKED



Photo: Alari Luuga

Scenario at a glance: The region is characterized by fragmentation and mistrust. Political parties dominated by old-fashioned business interests are playing to old stereotypes to build protectionist walls and downplay any potential advantages to collaboration and the “common” cause. The environmental decline of the Baltic Sea has accelerated, but the powers-that-be have positioned themselves to benefit from rising prices and new business opportunities to sell alternatives for what was once a free and shared resource.



Shipwrecked



Photo: Zahra Dabiei

Today the mood is apathetic with respect to climate change and global warming – “what will be will be”.

After the financial turmoil of 2008, the world went into a global recession that lasted through the late 2010s. This resulted in depressed economic growth worldwide, including in the Baltic region, which subsequently recovered due to the relentless focus on growth at any cost and job creation. Thus direct short term profit margins continue to take priority over all other issues, including the importance of a healthy environment to underpin current and future economic growth. Despite the persistent efforts by some countries to get their national budgets in balance, it was not until around 2023 that we began to see stabilization in the European economy as a whole.

Most people are fed up with the environment and climate change debate. By the mid 2010s the multiplication of international conferences held on species, water, biodiversity and so forth were seen as expensive junkets yielding little in the way of tangible results. The climate change conference, Kyoto +20 held in 2017, was an example – a major disappointment with no new effective international agreement on greenhouse gas emissions. Although the impacts of climate change are increasingly experienced with extreme weather situations, flooding of rivers, and such, it is no longer a major political or business topic. Today the mood is apathetic with respect to climate change and global warming – “what will be will be”. Greenhouse gas emissions have continued to grow.

This sense of apathy extends to the public and private sectors. Actions are reactive rather than proactive, dealing with crises as they come. This frequently results in a total neglect of preventative or precautionary environmental actions and instead a focus on the immediate human and economic fallout of the mess caused by flooding, crop failure, widespread algal blooms and other environmental disasters. The lack of integrated governance is clearly seen and widely felt.

NONE OF THE 14

OPEN SEA BASINS OF THE BALTIC SEA IS IN GOOD STATUS

OIL SPILLS

Lack of cooperation between countries and a lack of will and funds to monitor the increased number of ships has led to a 'wild west' attitude. In 2010 there were an average of 150 accidents per year which grew to a record breaking 294 accidents in 2026. Many result in oil spills - on average 2.3 accidents per year resulting in a spill larger than 100 tons.

Economic growth before environmental concern – bottom line rules

With the decline in government oversight and enforcement on most issues, there is a 'race to the bottom' where everyone – public and private interests alike – is trying to get their share of the dwindling resources before it is too late. Short-termism has become the prevailing ideology. Environmental issues are low on most actors' agendas. Instead, the 'money talks' mentality combined with weak or no compliance on environmental impact assessments (EIA), caused the pressure on the Baltic Sea to increase, further accelerating the decline of Baltic Sea ecosystems.

Baltic Sea countries have focused heavily on infrastructure investments – ports, pipelines and energy systems – as a means of recovering from economic crisis, boosting their economies and keeping unemployment down. Many existing ports along the Baltic Sea coast, for example, have been expanded to be able to handle the growth of cargo, containers and oil shipped.

Dead zones and toxins in the Baltic Sea

The areas of the Baltic Sea not suitable for fisheries, aquaculture, or even tourism and recreation have increased enormously, particularly over the last ten years. The HELCOM Holistic Assessment continues to show that none of the 14 open sea basins of the Baltic Sea is in good status. Eutrophication with yearly algal blooms, increasing dead zones, over-fishing, pollution by hazardous substances and the subsequent loss of biodiversity remains a growing reality. Coast Guard reports increased amount of illegal spills and discharges but do not have enough resources and power to really stop this and charge those who are responsible.

While in 2010 there were only 73 pollution hot spots remaining on HELCOM's list of point polluters of hazardous substances, another 29 have since been added or returned, further underlining the lack of environmental focus in new investment activity. Levels of several hazardous substances, including dioxins and furans, are back on the increase.

The many large infrastructure projects developed around the sea have had a serious impact on the environment. Most were approved without appropriate EIAs and therefore proper mitigation was not conducted. Dredging activities have caused changes in the chemical composition of the water as toxins and nutrients are released from sediments. This has triggered a release of heavy metals and embedded nutrients, which will continue to affect marine life for many years to come.

Many existing ports along the Baltic Sea coast, for example, have been expanded to be able to handle the growth of cargo, containers and oil shipped.



Photo: Jurand

PEAK PHOSPHORUS

Farmers around the world increase crop yield by using phosphorus-rich fertilizer. All living things use phosphorus extensively for a variety of key functions, including the construction of DNA and cell membranes. Without a steady supply of this resource, global agricultural production will face a bottleneck, and humankind's growing population will suffer a serious nutrition shortage.

Reliance on phosphorus started in the 1950s with a series of agricultural innovations that made it possible to feed the several billion person increase in the global population. By 2008, industrial farmers were applying an annual 17 million metric tons of mined phosphorus on their fields. Demand is expanding at ~3% a year, and likely to accelerate due to rising prosperity in the developing world and the growing crop-based bioenergy sector.

Our supply of mined phosphorus is running out. Many mines used to meet this growing demand are degrading, as they are increasingly forced to access deeper layers and extract a lower quality of phosphate-bearing rock. Even mining sea bottom for phosphorus may become an option. Some initial analyses estimate that there will not be sufficient phosphorus supplies to meet agricultural demand within 30 to 40 years.

(Source: http://www.foreignpolicy.com/articles/2010/04/20/peak_phosphorus?print=yes&hidecomments=yes&page=full)

The use of fertilizers and pesticides has either been maintained at high levels or even increased, and is now only held back by high global market prices.

Fragmentation causes a clutter of different solutions

A number of local scattered initiatives differ from country to country, causing much confusion but with few clear demonstrated benefits either for the economy or the environment. Maritime spatial planning has been the subject of much discussion over the years, through various conferences and meetings. While it is a well-known concept within the Baltic Sea region, its uptake differs quite radically these days between the different countries and areas.

Today maritime spatial planning is mainly used to manage and secure the interests for industry on national basis, rather than to promote national or even regional cross-cutting goals. This causes difficulties for regional operators, who are forced to grapple with a confusing web of laws and priorities for each state. Further, environmental management is weak overall in the region. MPAs with proper management plans only exist in areas where industry has little or no interest, which often means that these areas represent minimal biological or ecological interest as well.

Energy – a large mixture of sources

Some countries have developed a significant renewable energy production base, such as wind parks or bioenergy refineries in forest dense areas. But there has also been an increase in local initiatives for extraction of oil and gas in the Baltic Sea. The absence of a dynamic regional grid or energy trading system has forced nations to solve their energy issues nationally. This has hampered the development of intermittent new energy sources such as wind, wave and solar. Of the 54 new wind farms that were planned in the region between 2010-2030, less than half are completed due to the lack of coordination and political will on the one hand and deficit in (regional) funding on the other.

The seabed southeast of Gotland, which is estimated to hold large oil deposits, was cleared for drilling in 2021 when the Swedish government finally yielded to industry pressure. The Swedish oil company OPAB succeeded in its application for permission to drill in Sweden. Last year LatOil and CarbLith secured similar permits to drill the Latvian and Lithuanian parts of the same oil field. The operations are just getting started, infuriating local environmental groups.

Unlike the Southern EU states, most of the Baltic EU Member States succeeded in producing 20% of their total electricity demand from renewable sources by 2020, per the EU energy directive of 2007. But few got much further due to lack of technology sharing, coordination and political will. Sweden, Estonia and Finland were already beyond the 20% goal in 2010; Denmark, Latvia and Poland all passed the test by 2020. Since then, not much has happened.

Food production and environmental damage

The EU Common Agricultural Policy (CAP) lost most of its public support back in the late 2010s and, as a consequence of this together with economic crisis, farming policy decisions shifted back to individual countries. This had both positive and negative impacts as the countries around the Baltic Sea dealt with this situation very differently. Some tried to support high environmental standards for a while, but the pressure from cheap imports made it impossible. In general, competition has led to lower food prices at the expense of the environment. Funds have been steadily shifted away from ecological support for farmers. The use of fertilizers and pesticides has either been maintained at high levels or even increased, and is now only held back by high global market prices.

The fishing industry is increasingly stressed as a 'tragedy of the commons' continues to plague marine areas in particular. The EU's Common Fisheries Policy (CFP) reform in 2013 did not go far enough to improve conditions for the fishing sector. This was due both to a lack of political will and to vested interests keeping fishing quotas too high, leading to a collapse of the commercial fish stocks in the Baltic Sea around 2022. Efforts have been made to restock commercial fish populations but with no success due to poor environmental conditions. Baltic fishermen are no longer able to maintain their livelihoods.

Strong regional challenges – inequality

Inequality has increased within and among countries across the Baltic Sea region. Nationalistic movements in some countries are seen in parallel with a more unstable

IN 2030

THE BALTIC SEA IS OFTEN USED AS A CAUTIONARY EXAMPLE FOR OTHER MARINE AREAS

geopolitical situation, fuelling and fueled by misunderstanding and scepticism concerning the neighbours politics. Among other things, this has led to increased military activities around the Baltic Sea, many of which are in conflict with nature conservation.

With a successful transition to a market economy, Russia has become a much more influential player in the region. Relations of the other Baltic Sea countries with Russia are focused on issues such as energy, economic growth and military balance. Environmental pressures from the other Baltic Sea countries on their eastern neighbour have been relegated to a footnote of history.

The Baltic Sea in 2030 is often used as a cautionary example for other marine areas. It is largely considered a 'dead sea' given the large-scale ecosystem collapse and loss of habitats and biodiversity. This is blamed on the failure of governments, companies and citizens to take a long-term view and responsibility for their own impact, as well as a lack of leadership to deliver upon the required regional actions to secure the long term provision of the sea's public goods and services.

MPAs with proper management plans only exist in areas where industry has little or no interest, which often means that these areas represent minimal biological or ecological interest as well.



Photo: Paull Merriman

WE MUST CHOOSE THE WAY FORWARD



OUR OWN FUTURES

AND THE FUTURE OF THE BALTIC SEA ARE INEXTRICABLY LINKED



Photo: WWF Finland / Tuuli Aikäs

WWF is committed to working together in partnership with individuals, industries and public and private institutions to move beyond words to demonstrate successful examples of how sustainable development and ecosystem based management can be applied in practice and deliver real progress.

The implications of the four scenarios presented in this report are diverse and compelling for anyone with more than a passing interest in the Baltic Sea. Each reader is likely to have come away with a different opinion about which scenario is more probable and/or desirable, depending on personal, political and organizational perspectives. Whatever the range of reactions, the discussion ultimately returns to the question of what is best for the Baltic Sea.

Through our work to develop, advocate and implement solutions to protect the Baltic marine ecosystem and ensure the sustainable use of its resources, WWF has experienced firsthand the growing desire across the region to ensure a bright future for the Baltic Sea. This desire stems from the growing realization that our own futures and the future of the Baltic Sea are inextricably linked.

The sheer scale of the challenges facing the Baltic Sea requires a much broader engagement and action – of both the public and private sectors – than exists today. Real leadership is desperately needed and while government action and leadership is essential, it is not enough. Governments do not act in a vacuum. Governments represent communities, industries, civil society and individuals. This means that we each in turn must be much louder and clearer about our desire to see their strong leadership and action on behalf of the sea. Leadership, commitment and action will be required at all levels of society if we truly wish to achieve a sustainable and healthy Baltic Sea in the future. It was with this in mind that WWF launched this Scenario Process to facilitate the broad engagement of the public and private sectors in a dialogue and to ask ourselves what kind of future we really want in the Baltic Sea, and to define what kind of commitments and actions would be needed in order for us to reach this desired future.

Our timing, it seems, could not be better. Currently, there is a surge of interest in and support for our oceans, seas and coasts. ‘Blue’ and ‘Green’ growth are the buzz words of the day. Our oceans, seas and coasts are increasingly being characterized as areas of underutilized development and job potential. While there are indeed strong future possibilities for further development and growth, we must also recognize that our marine areas globally, and the Baltic Sea in particular, hardly represent a new frontier of development. They instead represent, in many cases, areas of historical exploitation resulting in highly stressed ecosystems in dire need of a more efficient, holistic and integrated approach to their planning and management to reduce potential conflicts and support sustainable development within the capacity of the ecosystem.

“Sustainable development” and “ecosystem based management” are two terms with near ubiquitous use today. They are encoded in government, NGO and industry manifestos alike – liberally applied in official speeches from the same and used to describe how everything from fisheries to gas pipelines should be conducted in a responsible way. But what these terms mean in practice and how they can and should be applied beyond rhetorical flourish is proving to be one of the greatest challenges of our time.

WWF is committed to working together in partnership with individuals, industries and public and private institutions to move beyond words to demonstrate successful examples of how sustainable development and ecosystem based management can be applied in practice and deliver real progress towards securing a bright future for the Baltic Sea.



We must act in partnership so that we can together, create a bright future for the Baltic Sea.

We do not know what the future holds. Scenarios, however, help us describe possible futures, which is what this report aims to do. By describing what is possible tomorrow we believe we can better prepare ourselves for potential actions and responses today. As we envision the type of future we wish to secure in the Baltic Sea region, we begin to shift our mindsets to what it will take to get us there.

This report and the ideas behind it represent a diversity of perspectives and possibilities and, we believe, the first steps in a longer journey to both define the opportunities and challenge ahead as well as lay the groundwork for informed actions to support a brighter future for the Baltic Sea. We hope that this report will spark an ongoing dialogue and serve as a catalyst for future collaboration, commitment and action to work in partnership to create the Baltic Sea we wish to have, today, tomorrow and in 20 years. Ultimately, the best way to predict the future is to invent it. So, let us invent the future together by:

- Recognizing that the basis for our future is dependent on securing ecosystem health, including ecological processes and services;
- Ensuring that governance of the sea is integrated and coordinated, within and between sectors and countries as well as between agencies and ministries with different mandates;
- Showcasing good examples of leading individuals, industries and institutions who are already taking bold steps to secure and/or invest in a brighter future for the Baltic Sea so we can ‘scale-up’ and make these examples the norm rather than the exception;
- Encouraging, incentivizing and supporting those individuals, industries and institutions who have not yet taken steps to advance but are eager to do so; and
- Acting in partnership so that we can together, create a bright future for the Baltic Sea.



Photo: Rico Koedde

APPENDIX 1 - PROCESS

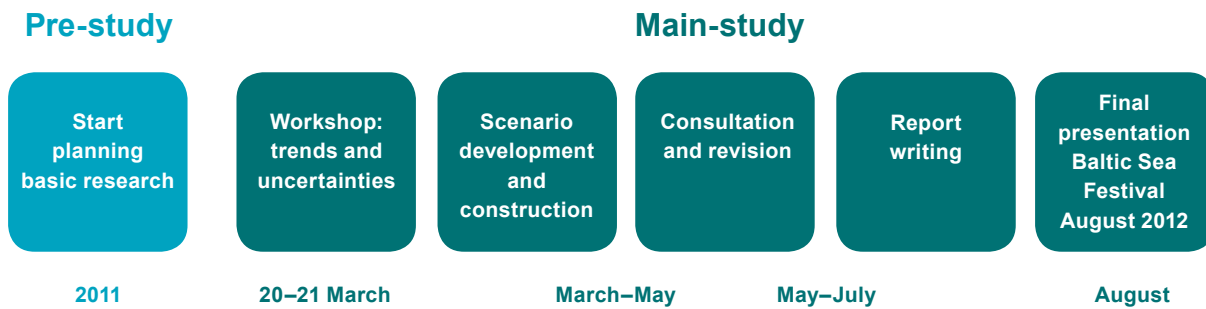


Figure 1: The process

Pre-study

A pre-study was conducted to inform project design. This yielded the focal question and the format.

Focal question

The focal question is **Possible futures for the use of the Baltic Sea towards 2030**. It includes looking at future issues of the sea itself, as well as social, economic and ecological impacts on the possible future uses of the Baltic Sea.

Scenario workshop

A workshop held in March 2012 involved some 50 persons representing a wide range of countries, sectors and institutions from all around the Baltic Sea. The participants identified a vast array of important trends and uncertainties affecting the Baltic Sea.

Scenario development

In April–May 2012, a core team analysed the material from the workshop. The *trends* and *uncertainties* were evolved and the scenario stories were developed.

Consultation and revision

A draft report was circulated. In June–July 2012, workshop participants had the opportunity to comment on and make revisions to the report.

Final presentation

The finalized report was presented at the Baltic Sea Festival in Stockholm in August 2012. **While the report reflects a diversity of inputs, WWF takes sole responsibility for the final content and recommendations.**

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www.kairosfuture.com

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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

	<p>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.</p> <p>www.panda.org</p>
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Please contact us for more information!
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www.panda.org/balticcontacts