

ICZM Strategy for the Wadden Sea Region



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Chapter 1: Introduction

Integrated Coastal Zone Management

The Wadden Sea Forum has taken up ICZM as a process for achieving sustainable development of the Wadden Sea. The WSF has further developed the ICZM process, including guidance on further specification and recommendations for ICZM to add value to the sustainable development of the Wadden Sea Region. In particular, this means integrating specific cross-sectoral and transboundary strategies, actions and techniques which are environmentally sound, economically viable and socially beneficial.

The increasing uses of the Exclusive Economic Zones (EEZ) further off-shore of the protected Wadden Sea have led the WSF to enlarge the scope of its work regarding ICZM objectives. Maritime Spatial Planning (MSP) as an instrument in Integrated Maritime Policy (IMP) follows principles similar to ICZM. MSP and ICZM can therefore be combined in the strategy for the Wadden Sea Region.

Administratively, the three Dutch Wadden Sea provinces, the German counties along the coast and the Danish Wadden Sea municipalities are part of the Wadden Sea Region (WSR). Taking into account the German Federal State system, the WSF encompasses four regions and covers an area which includes the coastal zones, the Wadden Sea with its islands and sands and the relevant parts of the North Sea EEZs of Denmark, Germany and The Netherlands.

Background

The Wadden Sea Forum (WSF) is an independent platform of stakeholder organizations in the Wadden Sea Region (WSR) of Denmark, Germany and The Netherlands and started its work in 2002, following a decision by the 9th Governmental Conference of the Trilateral Wadden Sea Cooperation (TWSC) in Esbjerg:

"To convene, therefore, in accordance with the Terms of Reference in Annex 6, a Trilateral Wadden Sea Forum, as a consultation project, with the participation of the governmental and non-governmental stakeholders, with the task of developing proposals for sustainable development scenarios and strategies for their implementation, respecting the existing protection levels, and ensuring economic development and quality of life. This will be done on the basis of the Shared Vision, the Wadden Sea Plan Targets and the Shared Principles and as a contribution to the further development of the Wadden Sea Plan"

Acknowledging the successful promotion of sustainable development in the Wadden Sea Region, the 10th Trilateral Governmental Conference (Schiermonnikoog) stated:

"We highly appreciate and accept the Wadden Sea Forum (WSF) as a valuable partner in achieving sustainable development of the Wadden Sea Region and contributing to an Integrated Coastal Zone Management (ICZM) Strategy".

Some years later, the 11th Governmental Conference on Sylt also welcomed the activities and recommendations of the Forum and declared support for and cooperation with the WSF as an independent stakeholder forum with a focus on integrated management.

Since March 2011 the WSF is a non-profit society with an enduring close connection to the TWSC. The WSF is the main stakeholder platform for the TWSC and provides contributions on ICZM issues (Wadden Sea Region Planning Portal, sustainability indicators, climate atlas), conflict resolution in goose management, shipping safety and CO₂ neutrality.

Structure of the Strategy

This document explains the WSF ICZM strategy from two perspectives: One by framing WSF activities within the ICZM concept, including links to Marine Spatial Planning; two, by assessing its existing vision document "Breaking the Ice" from 2005 to develop its idea of future development for the Wadden Sea Region. Chapter 1.2 defines **where** this strategy aims to be relevant.

Subsequent chapters develop **what** can be achieved. A rather abstract long-term vision (chapter 3.1) is followed by more specific objectives (chapter 3.2), many based on the indicators developed in the WSF's sustainability indicator tool.

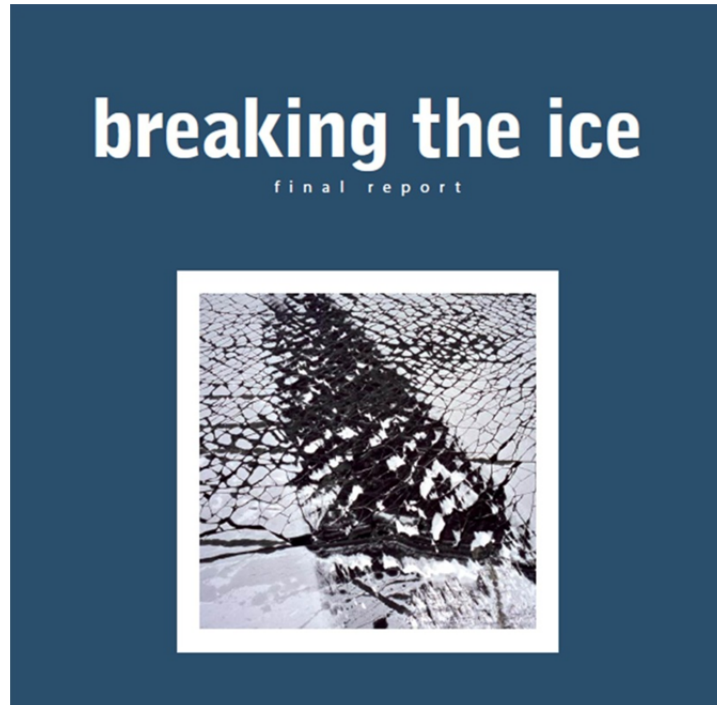
How to move towards this long-term vision and achieve the objectives related to the types of process and instruments that can be used. The ICZM principles defined at European level in 2002 form the starting point. Chapter 4.1 describes how these principles are interpreted and applied in WSF work. WSF instruments (chapter 4.2) relate mainly to either communication among actors, and/or information tools.

These instruments identify common themes and projects on which research institutions and other organisations can work together (chapter 4.3).

While chapters 1 to 3 are based on existing activities and outline how the WSF works towards its objectives, chapter 5 provides recommendations for further development and improvement of WSF work. These are addressed to specific actors (**who**), linked to a specific timeframe (**when**) and either particular areas and/or sectors (**where**).



Chapter 2: Review "Breaking the Ice"



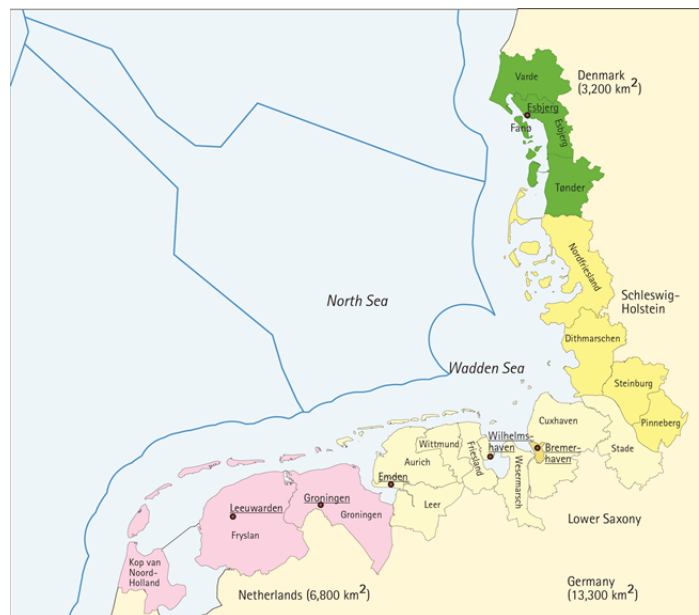
The ICZM strategy builds on the strategic results documented in "Breaking the Ice". The report was presented as a first step towards an ICZM strategy for the Wadden Sea Region and as a starting point for integrating national ICZM strategies. Many statements and recommendations made in "Breaking the Ice" are still current as implementation has not taken place. But to some extent, the situation has changed due to developments in the regions. Therefore, a review serves to identify still relevant strategic subjects and adapt the ICZM strategy to recent and future requirements.

2.1 Tasks of the Forum

When the WSF was established in 2001/2002, the tasks were formulated in an Annex of the Esbjerg Declaration. The focus was on sustainable development scenarios and strategies to be presented to the next Trilateral Governmental Wadden Sea Conference. The results were seen as contributions to trilateral policies and management. The WSF was envisaged as a three year project, with outcomes to be implemented by the Trilateral Cooperation. As time passed, stakeholders and the Trilateral Cooperation agreed to continue the work of the WSF to serve as an independent trilateral advisory and consultation body to the TWSC. The WSF was subsequently established as a non-profit society for administrative reasons, with its main goals unchanged, but with a wider outlook. The WSF is working towards a sustainable Wadden Sea Region and delivers advice on topical issues to the TWSC, regional and local governments and stakeholders.

2.2 Working area

The geographical scope of the Forum was first defined as the trilateral Wadden Sea Area plus the adjacent mainland. Subsequently, the Wadden Sea Region (WSR) working area covered the Dutch Wadden Sea provinces, the German counties of Niedersachsen and Schleswig-Holstein adjacent to the Wadden Sea and the 10 Danish Wadden Sea municipalities, which were merged to four municipalities in 2007. The geographical scope



was also made more flexible to integrate measures over a wider Wadden Sea Area. These measures were mainly related to recent off-shore developments like increasing shipping, mining and energy production. Consequently, the trilateral Exclusive Economic Zones (EEZs) of the North Sea are part of the Wadden Sea Region.

2.3 Status and developments

The Wadden Sea Area was and still is an outstanding natural reserve. Its importance was highlighted by its inscription on the World Heritage List. This demands even closer attention to ensuring that developments in adjacent areas are more sustainable. The description of the socio-economic situation and future outlook was described in quite negative terms in "Breaking the Ice". Decrease of population, insufficient human resources, low innovation and too many rules and regulations were some examples. However, there are positives. Some areas have experienced population drops while others register an increase. The education system is of a good standard. The infrastructure of high schools, universities and polytechnics provides good facilities, but unfortunately, young qualified people leave the region, as jobs with higher qualification skills are not sufficiently available. Also investments in an innovative economy are low. "Breaking the Ice" stated too many rules and regulations and a disharmonized implementation of e.g. EU Directives. Changes in legislation and harmonization are part of a long term process on which the WSF can contribute through advice. Even if implementation of rules and regulations is undertaken differently on national levels, a trilateral approach and framework should be adopted.

2.4 Vision

The general meaning of the vision, defined in 2005, can be rediscovered in the WSF vision of today (see chapter 3.) Time has shown that increasing efforts have to be made to reach the status formulated many years ago. Also most of the objectives have not lost their importance; this is due to their generality. After some years of stakeholder dialogues, the statements made about the objectives were the maximum achievable. Today, the objectives could be much more specific and concrete.

"Breaking the Ice" as an important contribution to ICZM for the WSR was welcomed at the Wadden Sea conference on Schiermonnikoog, but its recommendations were barely implemented. This was also due to the fact that implementation of national ICZM strategies according to recommendations of the EU Commission was not intensively pursued.

Progress was made in developing sustainability indicators for defined objectives. Several of these trilaterally applicable indicators were defined and monitored for almost 10 years. The indicators deliver a worthwhile picture of how the WSR has developed over time.

2.5 Objectives and strategies

The WSF defined objectives and strategies for some overarching issues which concerned all sectors, e.g. coastal protection and infrastructure, as well as for several sector specific developments. Knowledge and understanding of the various development drivers was and still is essential for participatory and integration processes, which are also fundamental parts of ICZM.

a) Infrastructure



Infrastructure was considered as an important precondition for economic and social welfare. Objectives were related to improved accessibility to the region by road, train, air and waterways. It must be recognized that the influence of the Forum on infrastructure measures was quite limited, and because work on infrastructure was not seriously followed up. Infrastructure regarding the energy and harbor business was addressed by the relevant working groups.

Today, infrastructure is also part of the ICZM strategy for the WSR and according to the social dimension, infrastructure elements like education facilities, communication networks and health infrastructure are addressed.

b) Coastal defense



"Breaking the Ice" has not defined objectives and elaborated a strategy on coastal defense. The report referred to the trilateral working group "Coastal Protection and Sea Level Rise" (CPSL), who investigated the possible effects of sea level rise. The WSF welcomed the results of the working group and recommended that work continue with a focus on management and on integration in a joint ICZM strategy.

Subsequently, the WSF integrated the issue of climate change and measures like mitigation and adaptation into the activities of several working groups.

c) Shipping safety



The WSF dealt intensively with shipping safety and pollution. An important output was a study on maritime safety and pollution prevention carried by GAUSS mbH. "Breaking the Ice" delivered a set of 35 recommendations on spatial planning, shipping safety, emergency management, pollution and Port State Control. These were included in the Schiermonnikoog Declaration as an Annex. In order to proceed, a set of priority recommendations was also

defined for immediate implementation. Many are still of high importance and should be considered in present developments and taken up in the Tønder Declaration in February 2014.

d) Agriculture



The formulated vision of the sector aimed at a further development with a profitable income, taking into account the full variety of the cultural historic landscapes and the characteristic natural environment. Structural changes like scale enlargement as well as service and product diversification were measures to ensure a profitable agriculture. The approach was partly achieved with regard to service diversification

and conversion of production. On the other hand, developments in the energy sector resulted in switching production to crops for the energy market, which did not contribute to sustainable agriculture. Single-crop farming for energy production has low efficiency and displaces cultivation of regional products.

e) Fisheries



The sector aimed at a prosperous business with a long-term perspective by securing a healthy, dynamic ecosystem. Subsequently, efficient resource management, diversification, improvements of facilities and innovation became part of the strategy to work towards long-term, profitable fishing. Recommendations were directed to the political level to provide the necessary infrastructure and administrative support. Progress has been made with regard to labeling and innovative equipment. But still,

many conflicts within the sector on transnational level and with regard to nature conservation and the growing off-shore business have not been solved.

f) Energy



Vision and strategies formulated in "Breaking the Ice" were very future orientated and are still valid. Strategies to foster renewable energy production were transformed into businesses with an emphasis on wind and solar energy. Other recommendations, like the request for a 20% energy saving, increased energy efficiency and implementation of combined heat and power systems (CHP) were not sufficiently applied. The requested use of liquefied natural gas (LNG) as alternative fuel in the transport sector has been

further promoted and is still on the agenda. The further work of the Forum on energy transition, supply and distribution can build on the strategies and recommendations formulated almost 8 years ago as well as on the Sylt Declaration, which requested a development of a CO₂ neutral Wadden Sea Region by 2030 or earlier.

g) Industry and Harbour



The vision and strategies aimed at a healthy economic region with competitive harbors. The focus was on specialization in the food sector, the clustering of large scale industries to use harbors to optimal capacities and achieve other spin offs. The WSF promoted the vision and necessary measures among stakeholders in past years. To achieve the aims, collaboration at regional and national governmental level has to be increased. The previous recommendations

can be used as a basis for further specification and initiatives.

h) Tourism



In retrospect, vision and formulated strategies could have served as a basis for activities within the Wadden Sea World Heritage Site. High quality tourism, new markets, tourism as partner in promoting the unique nature and cultural landscapes and the development of a marketing strategy were already identified in "Breaking the Ice". Nowadays, this is going to be implemented under the umbrella of the World Heritage Site. Due to these developments, the WSF supports the tourism activities of the state

parties and the TWSC through stakeholder input, rather than working on its own priorities with an additional working group. Given its many stakeholders, including local authorities, the WSF is prepared to play an active role in the implementation of the trilateral Sustainable Tourism Strategy.

Chapter 3: Vision and objectives for the Wadden Sea Region

3.1 Vision

The Wadden Sea Forum aims to help achieve a sustainable society by 2030 in which:

Economic activity supports social development and safeguards healthy ecosystems and cultural historic landscapes throughout the Wadden Sea Region

The Wadden Sea Region focuses on attaining a sustainable society with healthy ecosystems and economy, respecting the need for effective nature protection and integrating the philosophy of sustainability throughout its dealings.

In order to reach this goal, authorities and other decision making bodies will have initiated a development process across the Wadden Sea Region, in which the people and stakeholders are involved. The component sectors will also have started a process to maximize their synergies to coordinate regional implementation of conserving natural and cultural assets.

New governance mechanisms, particularly a sound stakeholder-science-policy interface, provide effective information exchange to facilitate the coordinated growth and implementation of trilateral strategies and action plans with regard to spatial planning, infrastructure, transport, agriculture, fisheries, tourism, coastal defense, shipping, port facilities, social services, nature protection and any other policy areas with a possible impact on the sustainable development of the Region.



3.2 Objectives

The aim of this ICZM strategy is to achieve the objectives formulated below.

Introduction

The ICZM strategy encompasses a number of sustainability objectives which are relevant for implementing the strategy. In "Breaking the Ice" many objectives were defined in general terms. Over time, the WSF has worked on sustainability indicators which measure some of the objectives, to document how the WSR is developing in line with the aims. In the following sections, the social, economic and ecological objectives are explained, as is the way the WSR should develop during the coming two decades, and how the Region should look in the future.

In order to measure developments and status of sustainability in the WSR against defined objectives, the WSF has developed a tool with sustainability indicators. The instrument contains primary data from 2003 till 2013 and is regularly revised and adapted to reflect the changes within the national and regional statistics. Through an assessment of the data, trends in developments in the social, economic and ecologic dimension are identified.

The instrument is particularly useful in enabling comparisons between trilaterally harmonized data sets for the entire Wadden Sea Region and national, regional and local municipal data. The instrument identifies where decision makers can steer the development process towards more sustainability. The WSF compiles all the data, makes assessments on a multi-level system and continuously investigates new significant indicators.

The results document the general developments against specific sustainability objectives within the past ten years. A deeper analysis of the sustainability indicators, which will be elaborated in cooperation with the Dutch Wadden Academy, will investigate the driving forces of the developments and their interrelations. So far, a comparison between the objective aims and the actual developments in the past till today, builds the basis to draw recommendations for actions to reach the aims.

In the following, objectives for the most relevant issues/themes, defined and formulated by the WSF recently, are described in headlines. For those analysed by indicators, the results are briefly stated.

3.2.1 Social

A sustainable social environment is of great importance for society. This will strengthen the communal life and the interest for the Region. A healthy social dimension will also build a sound basis for cooperation and collaboration across various fields and will keep rural areas vibrant. The WSF has formulated some objectives in line with the WSF vision for a healthy society and these should be reached mid-term.



- Demography

Objective: The WSF aims at a balanced population structure with a healthy share of young and elderly people, with indigenous young people choosing to stay in the Region and population decline being averted.

Indicator results: The population structure is not balanced. The WSR holds a higher share of elderly people than the national average.

- Education and research

Objective: To ensure that a sound education and research system is in place to provide attractive prospects for the younger generation and high quality jobs which boost the attractiveness of the region.

Indicator results: The WSR is doing well. The share of school leavers with vocational or higher education qualifications is higher than the national average and research facilities are growing.

- Employment

Objective: To achieve almost full employment. In order to provide a robust and attractive employment market, a wide diversity of jobs is needed to attract the full spectrum of abilities, from high level professionals to those seeking manual and process employment.

Indicator results: The unemployment rate is higher and the share of high quality jobs is lower than the national average, even though the education facilities are good.

- Health

Objective: To provide a healthy environment, which has positive effects on people's health. A good medical infrastructure ensures medical care for people in the WSR in both urban and rural areas.

Indicator results: The analysis shows that on average in the WSR more people stay in hospitals than at the national level.

- Welfare

Objective: To ensure WSR residents have an adequate income, good living conditions and high life expectancy. Social equality and work-life balance should ensure satisfaction among the population. Furthermore, people in the WSR should strongly identify with their region.

Indicator results: Analysis of the indicator data shows that the WSR's figures on Gross Domestic Product (GDP) and cash benefits for households with low income reflects the national situation. But welfare outlay is more than GDP and other aspects have to be improved to work towards the objective.

- Cultural history

Objective: To ensure the cultural historic landscapes and heritage are visible in the regions and well preserved. The management of the heritage should enrich the values and tell the continuing story of living in the WSR, a landscape of world-uniqueness.

No indicator available

- Cultural identity

Objective: People should feel proud of being 'of the Region' and actively increase the awareness about the WSR. They should be aware of its historic development and of its transnational heritage values. Local production and products should play an important role in the world of work and consumption.

No indicator available

3.2.2 Economic

A healthy economy should not only be beneficial for the welfare of society but should also generate surpluses for environmental protection measures. Balanced economic development keeps the region vibrant and provides future prospects for people living and working in the WSR.



- Economic resilience

Objective: The economy in the WSR should be resilient against interruptions and disruptions like periodic economic recession, the unforeseen rise of major competitors elsewhere, unexpected plant closures and the challenges arising from technological change. The economy should have integrated region specific values and utilise natural opportunities which present themselves. Furthermore, it should be characterized by innovative developments and responsible entrepreneurs.

Indicator results: The WSR economy has developed well with regard to value added growth, but R&D expenditures were quite weak although education and research facilities were good.

- Harbour

Objective: Harbour development in the WSR should be environment and climate friendly. Adequate measures to reduce emissions, waste and harmful substances should be implemented. A harbour concept should be in place to coordinate services as well as to maintain competitiveness.

Indicator results: The indicator measured the level of specialization of each harbour, which also reflects the levels of cooperation between harbours. In the past years the indicator shows a negative trend.

- Shipping

Objective: The southern North Sea should be well-known for its safety in shipping. A sound vessel traffic monitoring system should be in place, places of refuge are implemented and transnational cooperation guarantees best traffic management in estuaries and main shipping routes. Emergency control in the WSR should be cited as best practice example for the rest of the world. Alternative ship propulsion should be developed and should contribute to a cleaner environment.

No indicator available

- Energy

Objective: The transition to environmental friendly energy production should be successfully implemented and energy production based on a broad and secure foundation. Off-shore wind parks and decentralized Heat and Power (CHP) systems should deliver climate friendly energy. Gas power plants should be reactivated or newly constructed to support the supply chain. The price for CO₂ certificates should stimulate further energy savings. New energy storage capacities should be developed and sound energy saving measures be in place.

No indicator available

- Agriculture

Objective: Agriculture should be a profitable business due to the production of high quality products and the cooperation with producers and consumers of local products. Scale enlargement should be an option only for a few farmers and smaller farms should have an adequate income. Nature and landscape management should be an integral part of the business. The production of energy crops should play no role. Sufficient compensation measures for harvest losses, e.g. caused by geese, should be in place.

No indicator available

- Fisheries

Objective: A long term perspective for the fishery sector should be guaranteed. New fishing equipment should be used to reduce the damage on the ecosystem. Fish stocks should not be endangered and allowed to recover due to sustainable fishing and no fishing zones. In the Wadden Sea Region only certified fishing methods should be used and the products should have a quality label. The fleets of the WSR should play an important role in cultural identity and tourism marketing.

No indicator available

- Tourism

Objective: A sustainable tourism strategy should be in place and the Wadden Sea World Heritage Site well managed. Quality tourism should increase and cultural landscapes and heritage be acknowledged as tourism destinations. The ferries to the islands should be emission free and education in sustainable tourism should be on a high level.

Indicator results: The analysis of tourism data shows an increase in overnight stays in the WSR.

- Rural development

Objective: Rural areas should have vigorous, new innovative enterprises which help to stop the emigration of young people. Small villages should be intact and the historic landscape well preserved. Innovative communication systems should make rural areas more attractive to the labor market.

Indicator results: The settlement of new businesses shows a positive trend and emigration and immigration of people are balanced.

3.2.3 Ecologic

In a sustainable Wadden Sea Region, a healthy environment is a precondition and the basis for the socio-economic development.



- Biodiversity

Objective: The WSR should exhibit a rich biodiversity not only in the Wadden Sea itself but also behind the dikes. Bogs, wetland meadows and typical hedgerows should contribute to the variety of species and biodiversity. Landscape management and sustainable agriculture as well as the natural dynamics of the Wadden Sea ecosystem should maintain these natural values.

No indicator available

- Air quality

Objective: Air quality in the WSR should be far better than in other regions. To some extent this should be a result of being a coastal area with sea breezes, but also due to the success of energy transition with a focus on wind and solar energy. Also the efforts in clean shipping should contribute to the good quality status of the air.

Indicator results: The indicator measures nitrogen, ozone and fine particles. As ozone and fine particles exceeded the safety limits on several days, air quality was stated as negative, even if the annual average of the emissions was in the normal range.

- Climate friendly WSR

Objective: Greenhouse gas emissions should be reduced, so that the WSR is almost CO₂ neutral. Electricity should be produced predominantly by solar and wind power, the ferries to the islands run with fuel cells or LNG. The Wadden Sea islands should be the pioneers in the transition to climate friendly regions. Overcapacities in energy production should be stored as hydrogen or methane. Coal power plants along the coast should only be used to guarantee a safe base load. Energy saving measures should be in place all over the Region.

No indicator available

- Darkness and silence

Objective: Light pollution should be reduced as much as possible. New techniques should be implemented to allow illumination only on demand. Energy saving lighting should be installed in all towns and villages. Industrial plants should illuminate only their facilities and not the wider area. The night sky should appear darker than ever. Noise emissions should be reduced. Transport should be much quieter and also port handling should use several measures for noise reduction.

No indicator available

- Wadden Sea World Heritage Site

Objective: The protection, management and awareness of the property should be safeguarded. Common responsibility for the site should be strengthened and the people should feel proud of this outstanding asset. The development of the WSR should be sustainable without adverse impacts on the Wadden Sea. National and international cooperation on and awareness of World Heritage should promote and support the site.

No indicator available

- Cultural landscapes

Objective: The most valuable features of the cultural landscape should be visible, preserved and maintained. Spatial development should be aware of the landscape assets and a cultural impact assessment should be obligatory for development measures. The landscape and heritage of the WSR should be managed as one coherent natural and cultural heritage in a land sea interface. Maritime archaeological sites should be investigated and preserved.

No indicator available



3.3 Outlook

Besides defining overall general recommendations as part of the ICZM strategy for the Wadden Sea Region (see chapter 5), some specific findings related to the objectives can be made. These findings will feed in to improve and adapt the strategy and improve the knowledge base.



Objectives and indicators

- A first assessment of the indicators will identify a trend in developments. For decision making, a deeper analysis will be necessary.
- Investigating the driving forces behind the development trends will provide clear background information for decision making.
- Developing further indicators for all defined objectives will allow a more robust assessment.
- Integrating nature and culture objectives will allow better integration of socio-economic development with natural processes.

Specific recommendations

Tourism: The WSF recommends close cooperation between the Trilateral Wadden Sea Cooperation and the WSF to implement the "Sustainable Tourism Strategy", elaborated by the Task Group Tourism.

Energy/Climate: The WSF has provided advice and recommendations for adopting sustainable energy as well as for CO₂ reduction measures to develop the WSR into a climate friendly Region. The results are in **Annex 1**.

Shipping: The WSF has provided a set of recommendations to improve shipping safety in the southern North Sea. The recommendations are in **Annex 2**.

Agriculture/Goose Management: The WSF has provided a trilateral goose management scheme to accommodate the geese as natural assets in the WSR while minimizing conflicts with the agricultural sector and making use of a trilateral coordinated management. The main results are summarized in **Annex 3**.

Chapter 4: Implementation

4.1 Principles

4.1.1 ICZM principles

For working on the objectives of its ICZM Strategy, the WSF follows the principles formulated by the EU in its 2002 recommendation on ICZM. These principles, based on experiences and good practice as identified, inter alia, in the Commission's demonstration programme on integrated coastal zone management between 1999 and 2002 are recognized as a way of how to ensure good coastal zone management. The principles are:

- a) a broad overall perspective (thematic and geographic) which will take into account the interdependence and disparity of natural systems and human activities with an impact on coastal areas;
- b) a long-term perspective which will take into account the precautionary principle and the needs of present and future generations;
- c) adaptive management during a gradual process which will facilitate adjustment as problems emerge and knowledge develops. This implies the need for a sound scientific basis concerning the evolution of the coastal zone;
- d) local specificity and the great diversity of European coastal zones, which will make it possible to respond to practical needs with specific solutions and flexible measures;
- e) working with natural processes and respecting the carrying capacity of ecosystems, which will make human activities more environmentally friendly, socially responsible and economically sound in the long run;
- f) involving all the parties concerned (economic and social partners, the organizations representing coastal zone residents, non-governmental organizations and the business sector) in the management process, for example by means of agreements and based on shared responsibility;
- g) support and involvement of relevant administrative bodies at national, regional and local level between which appropriate links should be established or maintained with the aim of improved coordination of the various existing policies. Partnership with and between regional and local authorities should apply when appropriate;
- h) use of a combination of instruments designed to facilitate coherence between sectoral policy objectives and coherence between planning and management.



4.1.2 The WSF approach

The WSF works on the ICZM principles as follows:

(a) The thematic perspective of the WSF is already broad, covering aspects of nature conservation as well as economic and cultural issues, as can be seen from the different working groups. With this broad scope the WSF also acts as an independent advisory body for the Trilateral Wadden Sea Cooperation. This ensures that cooperation in the Wadden Sea Region recognizes the express needs of local actors and can address more than nature conservation goals. In this way the WSF also aims to support the development of a broad regional "Wadden Sea" identity, a factor that has been identified by social research as a key to successful cooperation.

The geographical scope of the Forum has been extended to integrate measures across a wider region. These mainly relate to recent off-shore developments like increasing shipping, mining and energy production. The trilateral Exclusive Economic Zones (EEZs) of the North Sea are seen as part of the Wadden Sea Region.

(b) All current issues and activities discussed in the WSF WGs are based on a consensual vision (Breaking the Ice), which formulates a long-term perspective. To create a sustainable Wadden Sea Region is an overarching goal defined in the WSF as a long-term perspective. To monitor long-term developments and identify critical as well as positive trends the statistics based sustainable indicator tool has been developed.

However, improvements in indicator development, technical fine-tuning and regular (annual) updating are needed to increase operational applicability of the indicator tool. A significant problem is that changes in official statistics and differences in spatial coverage can create artificial changes in the indicators. To overcome such barriers stronger support from statistical offices in the 3 Member States would be needed.

(c) The WSF cooperates with scientific institutions which are active in the region, e.g. the Waddenacademie and HZG, and with networks such as EUCC-D. The WSF also participates in research projects when appropriate, such as the EU project ENHANCE. Cooperation partners include scientists from several disciplines including natural and social scientists. Concerning nature conservation, science is provided through the Trilateral Wadden Sea Cooperation. The sustainability indicator tool and the Planning Portal are aimed to provide a monitoring basis for social, economic and natural changes and can be seen as an "early warning" barometer which can be used to identify more specific research and / or management needs.

(d) The WSF sees itself as part of a wider group of actors which should develop ICZM at different levels and scales. For actors at European, Regional Sea, national, and within sub-national regions which encompass areas wider than the Wadden Sea Region, the WSF acts as an advisor on local specialities for the trilateral WSR. It provides insights, knowledge into, and contacts for, the WSR. This enables outside actors to recognize WSR specialities concerning natural conditions as well as economic, social and political structures. It can therefore act as a conduit between the trilaterally organized local actors, national actors and EU institutions.

(e) The actors organized in the WSF aim to apply this principle in their daily activities and to develop joint approaches and information exchange on how to apply good practice. The WSF stakeholders have acknowledged the targets in protecting the Wadden Sea ecosystem as basic principles. Monitoring programmes accompany gas and oil extraction to identify impacts on the environment such as pollution, changes in biodiversity and

seabed subsidence. The WSF supports the development of a sustainable tourism strategy to safeguard the natural and cultural values of the Wadden Sea World Heritage Site.

(f) The Wadden Sea Forum represents a wide group of actors ranging from local governments and regional to non-governmental organizations, including organizations from economic sectors, local companies and environmental NGOs. National authorities/governments are only participating as observers.

Initiatives and decisions within the WSF are made in meetings and workshops, in which all parties are involved. The WSF ICZM strategy is adopted by the plenary. Furthermore, strategies for topical issues and developments are elaborated on a cross-sectoral level and in a participatory process. WSF examples are the elaboration of a goose management scheme, the strategy to develop the WSR into a climate friendly Wadden Sea Region and a resolution on shipping safety.

(g) With local and regional administrations as regular members and national bodies as observers the WSF aims to provide a structure which enables coordination and information exchange among various administrations.

Coordination between local and regional governments is a functioning system that works well, as both levels are represented in the Forum. This collaboration is also implemented on a transnational level. In the Wadden Sea Region there is a long history of transboundary coordination on local and regional levels. This is partly based on the common cultural history with settlement development, trading and cultural identity.

Nevertheless, there is a lack in horizontal cooperation and partnership at national level. ICZM demands close cooperation between the different ministries and state agencies. This can be improved.

(h) Policy coherence and coherence with planning and management is not an issue in the dealings of the Forum. The responsibility for policy and planning is on the local and regional governments. The Forum of course, brings together the different sectors including the administrative bodies for knowledge exchange and development of common aims and objectives, but has not the power to manage coherence between policies and planning.

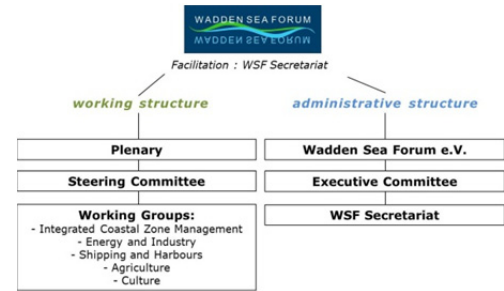
4.2 WSF instruments

The application of ICZM in general is implemented by a use and combination of multiple instruments, like legal and economic instruments, voluntary agreements, information provision, technological solutions, research and education.

The WSF also uses instruments which encourage the ICZM process and are integral to implementing the ICZM strategy. The WSF instruments are used to reach the vision and objectives and follow the described ICZM principles.

- a) WSF structure and governance
 - Plenary meetings
 - Cooperation
 - Sector coordination
- b) Working groups
- c) Sustainability indicators
- d) Planning Portal
- e) Research (Climate atlas...)
- f) Workshops and symposia
- g) Awareness

(a) The WSF structure and governance processes strongly support the implementation of the strategy. The plenary meetings guarantee an involvement of all stakeholders and an open participatory process. Also the relevant administrative bodies at national, regional and local level are involved. The working groups integrate the sectors in the ICZM process and elaborate on topical management issues relevant for coastal development. Plenary and working groups define sustainable management themes within the WSR.



The structure of the WSF ensures cooperation between the sectors as well as between the involved countries. Transboundary cooperation is of crucial importance for maritime spatial planning (MSP) and transnational agreements. In this context, the shared Wadden Sea ecosystem and the common cultural landscape are taken into consideration to work towards a sustainable WSR.

(b) Working groups are established by the WSF plenary to elaborate on relevant themes and topical issues contributing to a sustainable development of the WSR. The working groups also deliver a sound knowledge base to define objectives and to work towards the joint vision.

The ICZM group is responsible for the common and integrated management strategy for the WSR and elaborates on supporting instruments such as the indicator tool and the planning portal. Furthermore, a dialogue with the EU commission will address stakeholder strategies and practical experience of European policies and vice versa, relating European ICZM and MSP initiatives to the Wadden Sea Forum.

The working group Energy/Industry is currently working on energy production and supply in the coastal region and discusses new technologies of energy storage. An emphasis is laid on a reduction of greenhouse emissions, particularly of CO₂. It is envisaged to provide a concept to develop the WSR into a climate friendly, specifically a CO₂ neutral Region by 2050 or earlier. Recommendations will be forwarded to the political level and relevant stakeholders (see **Annex 1**).

The working group Shipping & Harbour elaborates on shipping safety in the southern North Sea, on clean shipping due to emissions and waste control as well as harbor cooperation among the Wadden Sea harbors. An emphasis is laid on a resolution on shipping safety with an outlook on VTM in sensitive marine areas (see **Annex 2**).

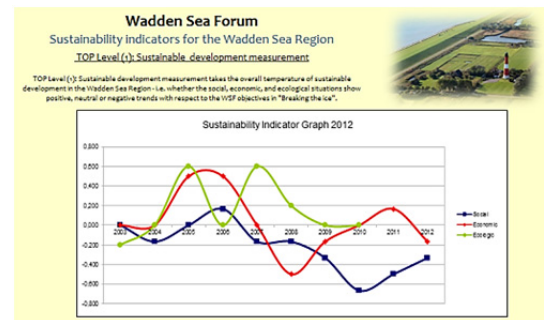
The working group Agriculture concentrates on the elaboration of the trilateral goose management framework scheme. This management framework aims at the accommodation of geese by balancing recreational and economic interests in an international perspective. It will deliver concrete proposals and advice for the designation of go-areas and no-go areas in a trilateral framework, taking into account compensation and management schemes to be integrated in agricultural production (see **Annex 3**).

The working group Cultural Identity brings together multi-cultural initiatives to better integrate cultural history in the socio-economic development of the WSR and to further elaborate on the cultural grounds of the people living in the Region. This is to strengthen the identity with the WSR and to keep the heritage alive.

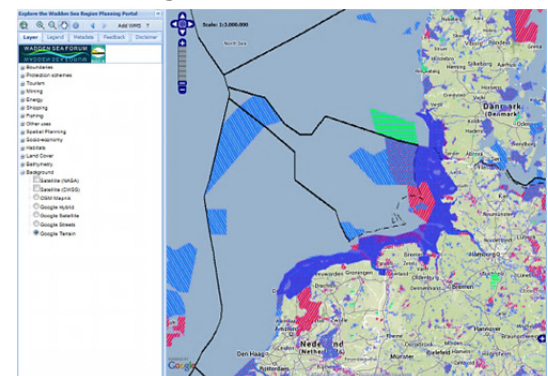
The working group Fisheries is currently pending. It is envisaged to work on a prospective future for sustainable fisheries, as the sector plays an important role in coastal economy and regional identity.

Besides the structure, some hard instruments are also used (c and d):

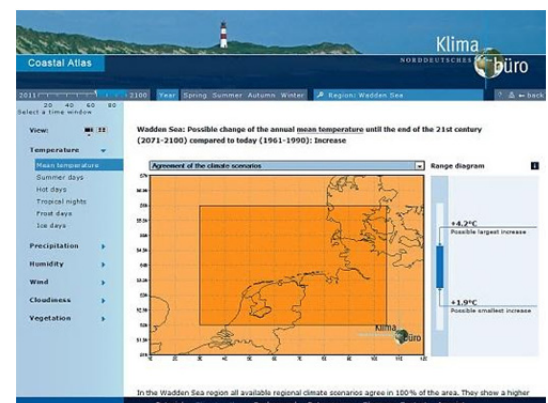
(c) The sustainability indicator tool is an instrument to communicate developments and trends in sustainability to stakeholders, politicians and other interested organizations. The data sets of the indicators can measure and evaluate the development of the ecological, economic and social condition in the Wadden Sea Region. The WSF has identified a set of trilaterally applicable indicators, to measure the status of sustainable development and the progress in achieving the objectives. For most of the objectives, indicators were defined and the results of some 10 years provide an insight in changes of developments and trends in the WSR (see also chapter 3.2).



(d) A further instrument is the WSR Planning Portal. The Planning Portal, based on a GIS, is an innovative application mapping the WSR including the EEZs of The Netherlands, Germany and Denmark. The Planning Portal has a focus on existing and partly planned activities in coastal and off-shore areas. It contains a wide range of uses, facilities and protection demands and is designed to meet the information needs of integrated management and marine spatial planning. It meets the need for information of coastal communities and stakeholders and lowers the barriers to actively participate in transnational planning and management processes.



(e) Research investigations improve the knowledge base for sound management and help increase understanding of natural processes in the coastal zone. The WSF is scientifically supported by e.g. the Dutch Wadden Academy, which carries out research on the sustainability indicators; the Leibniz Institute for Baltic Sea Research (IOW) which supports the Planning Portal; and the Helmholtz Zentrum Geesthacht (HZG) which has developed the Wadden Sea climate atlas and advises the WSF on climate change and adaptation measures.



(f) Workshops and symposia are tools for information exchange, increasing the knowledge base and for disseminating experiences and results about the ICZM process and implementation results. These events are also fantastic opportunities for awareness building.

(g) Awareness raising is an important measure to foster commitment and support for implementing the ICZM strategy.

4.3 Cooperation

4.3.1 Introduction

Knowledge within science, policy, private sectors and the public about functions and processes affecting the natural and social environment is needed to ensure sustainable development. This also applies to the Wadden Sea Region. Dynamics like regular tidal water flows, storm surges and flooding as well as changes within the environment in times of climate change have an impact on the people living close to and with the sea.

Taking a wide-ranging, overall perspective, integrated management is crucial to foster sustainable development in the region. Therefore, the WSF provides an important platform for stakeholders and experts who meet regularly within six topical working groups, namely on ICZM, Shipping & Harbor, Energy/Industry, Agriculture, Cultural Identity and Fisheries, to exchange knowledge and information.

Regional and international cooperation between Forum partners and experts from academia, research institutions and projects, from NGOs and the private sector are of crucial importance to work towards the joint vision and to implement the ICZM strategy for the WSR. In the following, main cooperation with external partners is briefly described.

4.3.2 Cooperation with governments



Trilateral Wadden Sea Cooperation, TWSC:

The WSF cooperates with the TWSC thematically on goose management, cultural heritage issues, CO₂ reduction and sustainable tourism. Stakeholder recommendations and advice on sustainable development are forwarded to the Wadden Sea Board (WSB), the governing body of the TWSC, in which the WSF has two advisor seats.

4.3.3 Cooperation with public bodies/organizations and NGOs



Coastal Union Germany, EUCC-D:

With EUCC Germany the WSF collaborates on the WSR Planning Portal and on ICZM/MSP matters. Scientific investigations and maintenance of the Planning Portal are done by EUCC in Warnemünde. The cooperation also focuses on information and knowledge exchange on ICZM matters and topical issues in this field.



North Sea Commission:

Information exchange with the NSC is mainly on Maritime Spatial Planning (MSP) and stakeholder involvement. Common initiatives were made to establish a North Sea wide stakeholder forum.

4.3.4 Cooperation with research institutions

Wadden Academy:

Information and knowledge exchange with the Dutch Wadden Academy is on socio-economy of the WSR and on cultural landscapes. With regard to socio-economy, the Wadden Academy assesses the sustainability indicator tool and analyses the driving forces of changes in developments.



Helmholtz Zentrum Geestacht, HZG:

Besides the scientific support of the HZG on ICZM, the climate office of the HZG has adapted its existing climate atlas to show WSF sectors. The scenarios support the dealings with climate change and adaptation within the WSF.



4.3.5 Cooperation with projects

Enhancing risk management partnership for catastrophic natural disasters in Europe, ENHANCE:



ENHANCE is a project under the EU FP7 that aims to develop and analyse new ways to enhance society's resilience to catastrophic natural hazard impacts. The WSF contributes with stakeholder workshops and advice.

Architecture and roadmap to manage multiple pressures on lagoons, ARCH:



ARCH is a research project under the EU FP7 and develops methodologies to manage the multiple problems affecting lagoons in Europe. The WSF delivers advice from a stakeholder view to the project.



Chapter 5: Recommendations

Based on the work of the WSF and its working groups and particularly based on the working group ICZM with its integrational character, a set of recommendations has been drawn up to address national, regional and local authorities as well as various other sectors and stakeholders.

5.1 Policy and planning integration

In order to achieve integrated policies it is essential that from the early stages of policy-development the interests of all stake-holders are taken into account. This means that cross-sectoral as well as, in some cases, cross-border consultations must be held. The WSF recommends

Establishing adequate governance mechanisms by using existing structures for planning and implementation;

This should for example include that the WSF as a body representing a substantial number of regional actors at transnational level is consulted early in the process over all MSP related activities as well as over implementation of environmental directives such as the MSFD, the WFD and Natura 2000 directives in territorial waters and in the EEZ. The responsible ministries at national and regional levels and the responsible subordinate authorities are requested to inform and involve the WSF secretariat from the beginning of such initiatives.

Strengthening horizontal cooperation in national and regional governments as well as horizontal transboundary collaboration;

This includes increasing the transparency of current and future planning processes through easily accessible websites in order to strengthen information flows and to assess the likely impact of existing and planned human activities in discussions between authorities and stakeholders. Cooperation also includes joint development of potential scenarios to resolve conflicts as one means of decision support. Ministries and authorities at all levels are requested to develop stronger mechanisms for transnational cooperation and to involve the WSF in this development.

To intensify cooperation between WSF and TWSC to face future needs (climate, energy, shipping, tourism, ...) jointly. The secretariats of WSF and TWSC should develop mechanisms for stronger cooperation within the next 12 months.

5.2 Integrated management

Integrated management flows from integrated policy-making and planning. Therefore, again (representatives of) all stakeholders must be involved in management. An effective way of achieving this is making use of advisory bodies at the appropriate level. The WSF recommends

A permanent consultation of stakeholders and sectors in policy making and planning with regard to the development of the WSR, including the development of a common vision for the WSR;

Encouragement of the science – policy – stakeholder interface to be prepared for adaptive management requirements;

This includes developing long-term partnerships with research institutions, the development of a long-term research agenda and provision of funding mechanisms for national and trilateral research projects related to this agenda. It is recommended that WSF and TWSC and its related bodies develop a proposal for the research agenda and discuss its implementation trilaterally with national funding organisations in all three countries.

Further developing the role of the WSF as a focal point and trilateral advisory body for integrated management;

This in particular requests strengthening of the WSF secretariat as the main organizational entity of the Forum.

5.3 Trilateral/transnational integration

To work towards a sustainable Wadden Sea Region, development policies, measures and activities have to be coordinated on a cross-border, trilateral level. Common goals in nature and culture protection as well as in strengthening the socio-economic basis of the WSR to increase sustainability demand a trilateral view on developments and management issues. The WSF recommends

Increasing information and knowledge exchange between national and regional governments and the stakeholders for the socio-economic development of the WSR through a transnational forum like the WSF;

Achieving more coherence between planning activities and management on a trilateral scale through adequate governance mechanisms;

This requires that ministries and authorities to strengthen information exchange and discussion across borders and at trilateral scale including on issues such as MSP (in EEZ and territorial waters) and implementation of environmental directives. Institutions such as the WSF should be included in such discussions in order to enhance the trilateral perspective.

5.4 Partnership

A sound partnership and network is an important precondition for successful integrated management. Reliability and trust minimize conflicts and lead to constructive cooperation. The WSF recommends

That in defining the scope and goals of the partnership in working towards the WSF vision, the WSF should be supported by regional and national bodies which would lead the work at those levels;

Defining stakeholder participation and partnership for the development of the WSR;

Developing sound communication processes between the partners as an essential part of future cooperation.

5.5 Monitoring

Scientific monitoring such as the Monitoring and Assessment Programme (TMAP) of the TWSC provides an inventory and assessment of the status quo of the socio-economy and natural systems in the WSR. It can deliver information about the progress of sustainable development and implementation of agreed objectives. The WSF recommends

Investigating the feasibility of expanding the TMAP into socio-economic monitoring;

Making an inventory of current human activities and of important ecological areas;

Setting up an adequate monitoring programme to measure the progress of sustainability in the WSR as well as of the progress working towards the defined objectives, and using the results to discover possible conflicts early on; in this context the WSF sustainability indicator tool should be used when designing the monitoring programme. Politics should ensure support from relevant statistical offices in the three Member States.

5.6 Awareness

A sound awareness among the politicians, stakeholders and wider society about integrated coastal zone management in the WSR is vital in working towards a sustainable and climate friendly Region. Awareness and understanding is a precondition for managing developments in a sustainable way. The WSF recommends

Defining relevant target groups dependent on contents and strategies of ICZM;

Implementing a purposeful communication scheme geared to the defined target groups;

Defining tools and instruments for promotion and awareness raising and furthering support for the International Wadden Sea School (IWSS) as an important body for education and awareness.

Annex 1: Energy

Main results, recommendations and statements of the WSF working group Energy/Industry

The working group staged an energy symposium on 3 June 2013 which aimed to define a holistic energy concept for the WSR taking into consideration production, supply and storage as well as distribution and consumption. Strengths of and obstacles to a promoted energy transition were analyzed and ways of working towards a climate friendly WSR were identified. Using the workshop discussions and results (see workshop report on WSF website), recommendations on CO₂ neutrality and energy transition were defined.

a) CO₂ neutrality

To work towards CO₂ neutrality, the system and boundaries (which sources are part of the calculation, which measures contribute to balancing emissions, etc.) have to be defined. To assess how the concept works in practice, projects should be implemented over a manageable area like a Wadden Sea island, which can then function as a show case for other regions. The degree of interaction between components of different systems has to be defined and considered in order to make further neutrality calculations. Incentives as instruments for CO₂ reduction have to be integrated. The whole process of CO₂ reduction encompasses different measures like avoidance, minimization, reuse, capture and storage and regulation.

The various approaches and views described above show the complexity of CO₂ neutrality. Therefore, the working group recommends

- Establishing a close collaboration between the WSF and the WSB to work towards a CO₂ neutral Wadden Sea Region; (spring 2014)
- Implementing a conference to discuss and define feasible systems for CO₂ neutrality; (first half 2014)
- Using the recognized area of the Wadden Sea World Heritage Site to raise awareness and to promote CO₂ reduction developments among stakeholders;
- Developing a roadmap on the basis of an inventory (energy demand, energy production, supply systems, emissions, regulations, measures); (2014)
- Funding the development of a roadmap; (2014-2015)
- Developing an economic business model for the future. (2015)



b) Economic impacts/influence of energy transition

Economic development will influence energy transition as well as on CO₂ neutrality. Also, economic impacts on the society such as rising energy costs and constructions of infrastructure have to be considered.

The working group generally recommends

- Developing coordinated concepts with proven technologies in a first step to reducing risks and gaining societal acceptance;
- Using synergies to minimize impacts and costs;
- Working towards establishment of a diverse energy supply instead of focussing on electric power generation.

Further levels of detail have to be defined in cooperation with stakeholders and political decision makers.

c) Social acceptance

Energy transition needs social acceptance to minimize conflicts and ensure the smooth development and implementation of measures. Power-to-gas technologies with production, transport and storage could use several options to reduce risks and conflicts. H₂ production and storage as well as H₂ generation by renewable energy sources and its compound process with CO₂ to methane are alternatives. To minimize conflicts within society and impacts on the environment, a new energy concept could use existing pipelines for transport. Electricity grids and gas pipelines must be integrated. The working group generally recommends

- Establishing a coalition between stakeholders and governments to jointly promote new technologies in the field of energy transition;
- Initiating an open dialogue across society;
- Clearly setting out the threats and opportunities;
- Involving the general public in future developments;
- Developing business models to prove the economic and ecological benefits of the energy transition.

Annex 2: Shipping

Main results, recommendations and statements of the WSF working group Shipping & Harbour

1. Introduction

The southern North Sea with its Wadden Sea is characterized by international and short sea shipping, recreational yachting, fisheries, ferry traffic and off-shore services. The traffic lanes directly north of the Wadden Sea, designated as Particularly Sensitive Sea Area (PSSA) and World Heritage Site, make this one of the busiest shipping areas worldwide.

The Wadden Sea Forum has been elaborating on shipping safety issues for a long time. In the recent past, measures like VTS and VTM came into a particular focus as options to increase safety standards. There is a growing concern about shipping intensity, in particular in the traffic separation schemes adjacent to the Wadden Sea area, in relation to safety and the environment.

Recent incidents like accidents and near collisions, loss of cargo (deck cargo and containers), the developments in the Eemshaven area and also the fast developing offshore wind farms require a re-evaluation of Vessel Traffic Management (VTM) and an assessment of what vessel traffic monitoring in the southern North Sea can provide with regard to shipping safety.

VTM can be described as a guidance advice system and global functional framework for all navigable waters, within which VTS may be the central instrument among various others. This framework should be supported by information management. The IALA definition of VTM is:

"...the functional framework of harmonized measures and services to enhance the safety, security and efficiency of shipping and the protection of the marine environment in all navigable waters".

2. Analysis of recent developments

2.a Shipping developments and cargo

The North Sea has about 260.000 ship movements (> 300 gross tonnages, GT) annually, making it one of the busiest seas in the world.



Shipping is directed via interconnecting traffic lanes to and from Antwerp, Rotterdam, Amsterdam, Eemshaven, Emden, Wilhelmshaven, Bremerhaven and Hamburg, and also to the North (i.e. to pass Skagen) and North East.

The shipping intensity in the TE-route/ German Bight to these ports amounted in some 50.000 movements in 2010, of which the biggest share was generated by the port of Hamburg. According

to the report of the policy document North Sea 2009-2015, the number of ship movements will increase by 14 % to 31% in the near future.

This busy shipping route is situated at a distance of approx. 12 miles north of the Wadden Sea, which has been designated as a PSSA, and of which the Dutch and German segments have been inscribed in the World Heritage list.

The developments and expansions in Eemshaven, Wilhelmshaven, Cuxhaven, Brunsbüttel and Hamburg will cause an increase in the number of tankers, bulk carriers and containerships approaching the ports.

The capacity of shipping lanes in the estuaries will grow to its limit without a sound vessel traffic management in outer waters.

The volume of container transport and shipment in the North Sea area is expected to increase, and so will contribute to traffic congestion in the area north of the Wadden Sea.

2.b Shipping routes

The main shipping lanes to the north of the Dutch and the Niedersachsen Wadden Sea are the so called TE-Route and the Deep Water (DW) Route.

The DW-Route is mandatory for ships which are designated according the IMO regulations as Oil, Gas and Chemical tankers >10.000 GT and some chemical tankers >5000 GT.

Tankers should take the shortest route from the ports to DW-Route and these ships are not allowed to take the TE-Route.

The development of Eemshaven will cause an increase in crossings between the DW Route and the TE-Route.

Oil tankers and bulk carriers have to meet a tidal window because of the special conditions of the Wadden Sea area with shallow waters, sandbanks and tidal currents. These ships have to operate within a limited time window and will pass the TE-Route in such a way that they will arrive at Eemshaven at high tide.

Obviously, the risk is still too high and any additional risk would be unacceptable in the Wadden Sea. The implementation of off-shore wind farms near the main shipping routes will also add a considerable additional risk. This begs more careful consideration and the establishment of measures which would compensate for this additional risk (Sylt Declaration 2010, § 36: "Reaffirm the importance of shipping safety with respect to any offshore activity. The safety of shipping in the North Sea Area should be kept at least at the present level, irrespective of which kind of offshore development might occur, and where feasible be enhanced.").

3. Recommendations

Recognizing the present and future developments with envisaged increasing risks to the Wadden Sea, the working group Shipping & Harbour of the Wadden Sea Forum recommends addressing the further needs in shipping safety to the Trilateral Wadden Sea Cooperation.

It is recommended that the 12th Trilateral Governmental Conference on the Protection of the Wadden Sea on 5 February 2014 in Tønder adopts the document.

The working group recommends developing a trilateral system for vessel-traffic monitoring in the German Bight with the aims of: ensuring strict compliance with existing rules; preventing dangerous situations; immediate intervention when a dangerous situation develops despite all efforts to prevent it; and, overall contributing to the implementation of § 36 Sylt Declaration.

This system will build on best practices of vessel management in estuaries and harbour approaches for further voluntary use in the main shipping routes, to support safe and efficient vessel handling. A close cooperation between shipping and port authorities, coast guard and ship owners will contribute to the enhancement of the system.

An enhanced vessel monitoring system will enable the coastguards or any other competent administration, to monitor safety of navigation and adherence to the international rules and it will provide safety information to shipping, particularly in crossings of the DW and TE route of the TSS and in harbour approaches.

In particular, it recommends:

- A more comprehensive monitoring of ship traffic using and crossing the traffic separation schemes;

- Implementation of an area-covering AIS and VTS from Northern Denmark to the South of The Netherlands;
- Combining cooperative and non-cooperative monitoring systems at best technique standards to increase the control system;
- Establishing reporting or calling in points (CIP) at places where ships are leaving or entering a vessel traffic scheme;
- Establishing a north to south lane (v/v) between the Deep Water Route and the TE Route (v/v), which vessels have to use when leaving the Deep Water Route destined for, or leaving from ports in the Wadden Sea Region;
- Ensuring there will be ample room between wind farms, traffic separation schemes and anchorage areas;
- Management and monitoring of the tidal windows in the Wadden Sea area and agreement on a protocol between the relevant authorities for the admittance of approaching vessels.
- Expansion of emergency towing capacity in the Wadden Sea Region;
- Introduction of a trilateral vessel traffic management system (VTM) in the Wadden Sea Region as a pilot initiative for regional seas;
- Establishment of a transnational maritime operation centre for monitoring and control.

Besides monitoring and management in shipping safety, additional measures will increase environmental friendly shipping standards. Therefore, it is also recommended to actively strive for/support

- Application of the Bonn Agreement;
- Application of the EU Maritime Transport Policy (according to goals and recommendations of Commission);
- Application of the Ballast Water Convention;
- The Convention on anti-fouling systems, IMO regulations;
- An action plan to deal with micro plastic pollution.

4. Conclusions

With a sound trilateral Vessel Monitoring system and the introduction of a VTM system for the entire area, the safety level for man and environment can be improved. Guidance for shipping in the area should be carried out on a multidisciplinary level between the coastguards, other control stations and port and river authorities. It will have a positive influence on shipping and industry, will enhance safety standards and will acknowledge the protection of the vulnerable Wadden Sea nature reserve and World Heritage Site.

Annex 3: Goose Management

Main results, recommendations and statements of the WSF working group Goose Management



Strategy for trilateral goose management

Benefits of the coordinated management of geese in the trilateral Wadden Sea Region

The Wadden Sea Region is one of the key areas for staging and wintering Nordic and Arctic geese in the western Palearctic and geese constitute an asset of high conservation and recreational value to the trilateral Wadden Sea. The fact that to a large extent they forage on farmland behind the dikes and consequently create conflicts with agricultural economic interests makes geese a special case for wildlife conservation and management. This calls for a careful and strategic treatment in order to balance the international conservation obligations with the benefits and costs of hosting the geese.

Firstly, so far the three Wadden Sea countries have not taken a concerted approach to the management of geese despite the fact that various larger-scale conservation and management decisions taken in one country may have knock-on effects in other countries – in terms of redistributing the geese. This incurs the risk of an uneven distribution of the burden of hosting geese between the countries.

Secondly, only by adopting an international perspective will it be possible to effectively identify and prioritize areas most suited to an integrated management approach, taking the necessary conservation actions for geese, while minimizing the economic costs. This can be undertaken by designing and designating priority goose areas with the right ecological conditions and minimal disturbance in the Wadden Sea. This will also involve ensuring that polders adjoining NATURA 2000 sites and management zones do not carry crops that are vulnerable to goose foraging.

Thirdly, by cooperation it will be possible to improve the mutual sharing of experience and learning as well as better integrating and taking advantage of monitoring and research in the management process.

Aims

The overall objective is to achieve the coordinated management of geese in the trilateral Wadden Sea using a strategic adaptive framework. Adaptive management is defined as an approach to managing natural systems that builds on learning – based on common sense, experience, experimenting and monitoring – by adjusting practices based on what was learned (Williams et al. 2009; Adaptive Management. US Dept Int Tech Guide).

This framework

- Ensures the maintenance of goose populations in a favourable conservation status according to the EU Birds Directive;
- Integrates geese in conservation and management objectives within the Wadden Sea and behind the dikes;
- Balances recreational and economic interests in an international perspective; and
- Increases the mutual sharing of management experience and learning by doing.

Specific objectives

The strategy contains the following specific objectives:

- Maintain populations of geese in accordance with national and international conservation obligations and policies; provide vital habitats for roosting and foraging with the aim of minimizing the cost of agricultural damage; maintain the range of geese with a perspective on the Wadden Sea Region;
- Provide an overview of goose distribution and areas of conflict as a tool to prioritize goose management zones in the integrated Wadden Sea Region;
- Promote and apply a go and no-go concept for the accommodation of geese in order to minimize agricultural conflicts;
- Evaluate societal costs (economic) and benefits (ecosystem services) of geese in the trilateral Wadden Sea Region;
- Establish an adaptive management framework for trilateral stakeholder collaboration;
- Establish a platform for collecting information and the effective sharing of experiences of goose management practices; and for communication of that knowledge.

Measures

Maintaining a trilateral Wadden Sea Goose Management Forum under the auspices of the Wadden Sea Forum to:

- Provide a basic overview of the distribution of geese in the trilateral Wadden Sea to be used for prioritization of go and no-go areas;
- Build the relevant capacity to predict, monitor and evaluate effectiveness of management actions (including scaring, creation of accommodation areas, subsidies, agri-environmental schemes); and
- Share experiences, communicate results and provide practical guidance to relevant stakeholders.

Recommendations for a 3-year time horizon (2014-2016)

Governance and Coordination

1. Denmark, Germany and The Netherlands continue the co-operation with respect to goose management on a structural basis in order to achieve good management of the wild goose populations in the tri-lateral Wadden Sea area.
2. The four governmental partners aim to agree on an ambitious and measurable target within two years, to reduce the present level of agricultural conflict.
3. The four governmental partners are responsible for the designation of the go-areas. Agreements between nature management, hunting and farming organizations should be drawn up and ratified.

Research and Monitoring

4. Promote a study of the societal costs and benefits of geese in the trilateral Wadden Sea region, to be conducted in 2014-2015.
5. Promote a joint trilateral research project to prioritize go-areas throughout the Wadden Sea region as well as to assess damage caused by geese and under which conditions the damage was caused.
6. Additionally to the Trilateral Monitoring and Assessment Programme (TMAP), development of a comprehensive trilateral goose monitoring and evaluation system with regard to further species resting and feeding behind the dikes. This will be overseen by the Goose Management Group of the Wadden Sea Forum. The monitoring system also considers estimates of agricultural damage.
7. Evaluation of the developments will take place every 4 years under the responsibility of the Goose Management Group of the Wadden Sea Forum, starting in 2016. This one has to be considered as the starting point.

Measures and Actions

8. Every governmental partner develops a management plan for non-breeding geese based on the designation of go and no-go areas. These four individual management plans complement each other and must primarily include designated go and no-go areas for at least 80% of the total number of goose-days in the region.
9. Every governmental partner actively develops additional instruments for a policy to reduce damage caused by geese outside the go areas and increase the attractiveness of go areas both for geese and farmers. This development will be a co-operative effort with the regional hunting, nature management and farming organizations.
10. The hunting, farming and nature management organizations in the Wadden Sea Region jointly develop or advise on techniques to scare geese in no-go areas.
11. The co-operating farming, nature management and hunting organizations per region take responsibility to develop a specific set of effective and efficient instruments in order to reach the goals formulated under point 2. This set of instruments will be brought together for the whole trilateral community.
12. The nationally selected go-areas shall be combined with the development of the set of instruments which will result in a trilateral management plan for the geese populations in the trilateral region under the responsibility of the Goose Management Group of the Wadden Sea Forum.