

Summary

1 The Wadden Sea Region

The Wadden Sea Region consists of an extensive system of barrier islands, sea, tidal flats and salt marshes, where almost undisturbed natural processes continue to shape the landscape and habitat. The Wadden Sea Area accounts for 60% of all the tidal areas in Europe and North Africa and provides a habitat for a very rich and varied flora and fauna. The area also contains age-old man-made landscapes reflecting a unique adaptation by human beings to the dynamics of a very special coastal area. The conservation status currently enjoyed by the area was not achieved without effort. Since the 1960s, the Wadden Sea Region and its future have been, and still are today, the subject of – sometimes heated – political and social debate and controversy. Gradually, however, it has become generally realised that the region requires special care. This has resulted in legislation and regulations, the guiding principle of which is to preserve the natural values of the Wadden Sea Region while allowing sustainable shared human use.

2 Ambition

It is the ambition of the Wadden Academy to develop the Wadden Sea Region into an incubator for widely applicable integrated knowledge of sustainable development of a coastal area, in which natural values are a key element and form the foundations of the local and regional economy. The region is a meeting place for scientists from the Netherlands and elsewhere, administrators, policy makers and management agencies. Together, they develop sustainable and innovative solutions based on interdisciplinary knowledge. By 2020, the trilateral Wadden Sea Region will be the best monitored and best understood coastal system in the world.

3 The Wadden Academy, its tasks and the research agenda

Devising a sustainable future for the Wadden Sea Region requires new knowledge and expertise concerning the natural, economic and socio-cultural condition and development of the region. Established on 30 July 2008, the Wadden Academy has the task of providing a sound scientific basis for the management of the natural and social values represented by the Wadden Sea Region. As the first task of the Academy, the present research agenda provides an overview of the gaps in our knowledge and the most pressing scientific questions. The agenda is the result of an intensive cooperative venture between the Wadden Academy and a large number of policy makers, administrators and scientists. As such, it also reflects the Wadden Academy's second task: to create a sustainable network for the joint formulation of research questions and the exchange of knowledge and information between science, government, private parties and social organisations. The Wadden Academy has entered into cooperative ventures with a number of ministries, organisations and institutes to ensure that the Wadden Academy's research agenda will play a part in the planning and consolidation of research relating to the Wadden Sea Region, the Wadden Academy's third task. When carrying out research, the Wadden Academy advocates a procedure which involves a co-production of knowledge by scientists, knowledge workers in public and private bodies and policymakers. All the parties benefit from 'engaged scholarship': more practical relevance and improved scientific backup.

4 The perspective of the Wadden Academy

The guiding principle for the Wadden Academy is to preserve the natural values of the Wadden Sea Area while allowing sustainable human use. However, the Wadden Academy notes that there is debate as to which natural values are the most important and as to the nature and extent of the restrictions on human use. For this reason, the Wadden Academy – in consultation with all the parties involved – is focusing on identifying the research questions which are relevant to achieving a sustainable future for the region. It is an objective of the Wadden Academy that all parties can put their trust in the systematic application by the Wadden Academy of the scientific rules for articulating problems and issues and for prioritising scientific questions.

The Wadden Academy focuses its attention on the study of changes which are taking place over different space and time scales and are the result of the interaction between the geosphere, hydrosphere, atmosphere, biosphere and humankind and society. Although, in the approach adopted by the Wadden Academy, great value is attached to knowledge of the



region's historic development on longer and shorter time scales, the historical conditions of the natural and socio-cultural system cannot automatically serve as targets for the region's future development. The Wadden Academy endorses research into conceivable future scenarios in which environmental and socio-economic developments or – rather – options are sketched out. How can the assets of the region be valued, what opportunities exist to preserve these values, and what investments are required? What values may be created under the changed circumstances that will pertain in future? What scenarios will produce a configuration of planet, people and profit that will have a permanent adverse effect on the resilience of the region and how can this be avoided? The Wadden Academy intends to play a part in this debate on future

options for the Wadden Sea Region by providing scientific understanding of how the region functions as a coherent system of natural processes, humanity and society.

Wadden Sea research has long been dominated by the natural sciences. Socio-economic research and, to a lesser extent, historical research is grossly under-represented in terms of volume and importance. The Wadden Sea Area and Wadden Sea Region should figure more prominently on the research agenda of economists, urban planners, experts on public administration, historians, sociologists, psychologists, anthropologists and cultural scientists. They can identify those who feel involved in the Wadden Sea Area and in what way, how this involvement is justified in history, what interests are at stake, what reference images of the landscapes are used and how this will affect the future of the area.

5 Values

The trilateral Wadden Sea Region has a prominent and special role in the global ecosystem. The region represents unique natural values, the protection of which is laid down in legislation and regulations. The Wadden Sea Region also represents a major value for the people who make their living from it. In addition, the movable and immovable heritage is an important force in creating identities and communities. Natural and cultural values play an essential part in tourism and leisure. An interdisciplinary perspective on value(s), valuing practices and value creation is therefore an obvious item on the Wadden Academy's research agenda. The Wadden Academy's aim is to compile the knowledge required to shape a future based on innovative and sustainable use of the natural and cultural values of the region.

6 A sound scientific basis

6.1 Geoscience

Geoscientific knowledge gaps with regard to the development of the Wadden Sea Region in time and space can be classified according to three themes. With respect to the subsurface of the Wadden Sea Region, more detailed knowledge is required of the geological composition and structure of the subsurface and other physical-chemical properties of rocks, faults and fluids. Detailed three-dimensional images form the basis for modelling and quantifying processes in the subsurface and thereby understanding and predicting the behaviour of rocks, faults and fluids. This is essential to optimise the present and future use of groundwater, salt and natural gas, the storage of gas and CO₂ and the retention of heat and cold for use in the winter and summer respectively. Within the theme of evolution of the Wadden Sea Region, a reconstruction should be made of the morphological development of the Wadden Sea Region during the late Pleistocene and Holocene and the influence of deeper structures on this process. This can provide a better understanding of the dynamics of salt marshes, flats, channels and outer deltas at different rates of sea-level rise. The role of human beings as a geological force – in relation to natural processes – must be made explicit. The theme of Wadden Sea morphodynamics requires more and better data on and understanding of the sediment balance for both sand and mud, including the impact of sand suppletions and the role of ecosystem engineers. A description in quantitative terms of the development of (components of) tidal inlet systems over a timescale of years up to a century is required in order to develop models that will enable us to predict the impact of sea-level rise and changing storm regimes in the Wadden Sea Region and to improve coastal defences.

6.2 Ecology

The Wadden Sea is a dynamic, coherent, open and highly valuable ecosystem. The food web is the backbone of this system. Understanding bottom-up processes in the food web requires improved monitoring, modelling and focus on qualitative aspects, as well as paleo-ecological reconstruction. With respect to top-down processes, too little is known about the effect of (partially extinct) top predators. Comparative research on other tidal flat systems is required. Non-trophic interactions occur due to the effect of biota on their abiotic environment. The dynamics of ecosystem engineers connect the ecological domain to the geomorphological domain, from tidal flats to dunes. The Wadden Sea is an open system: exchange with the coastal sea and the rivers plays an important role in determining the concentration of nutrients and organic matter. In addition, the region forms part of an international system of breeding and wintering areas for migratory birds. Global change is expected to alter the Wadden Sea Region substantially. This gives rise to the paradox of nature conservation in a changing world. It is essential to preserve and develop natural values while the boundary conditions are changing. 'Values' cannot be equated to 'states'; conservation of values cannot be obtained by returning to historic states in a world subject to global change. Consequently, a more detailed reflection on what are the most important values (and why) requires cooperation with the social sciences and the humanities.

6.3 Society and cultural history

Historically, large numbers of people have lived and worked in the Wadden Sea Region. In addition, this region has been used intensively and in various ways by visitors. The socio-political debate on how to care for the Wadden Sea Region is to a large extent dominated by questions about compatibility of human use of the region with preservation of the Wadden Sea Area as a nature reserve. In order to resolve these problems, more insight is needed into the perspective of residents and visitors. How do residents of the region shape their lives and earn their living; how do visitors regard the region and make use of it? How did this way of living and exploitation of the region's resources develop historically?

And what impact does it have on the region's climate, soil and subsurface and its natural values? These are the key questions in relation to society and cultural history. In terms of the triple bottom line model, they are questions concerning people (the first p), their way of life (p as in profit), their social organisation and the significance and value they attach to their natural and man-made environment (p as in planet), including how they deal with their impact on these values. We can add a fourth p to this model, namely their history and their relationship to the past. There are four subjects of research: the way in which people developed their way of life over time and how they used the natural resources that the region offered; the nature and interaction of 'wild memory' and disciplined history in the Wadden Sea Region; the historical development of the way in which the Wadden Sea Region is represented and valued; and the social and political organisation of a just and sustainable future for the Wadden Sea Region.

6.4 Social and spatial economics

From the perspective of social and spatial economics, the Wadden Sea Region challenges science to adapt existing economic ideas to a region with a very special economic, physical and spatial structure and institutional policy-related context. First of all, there is a need to describe present, past and future trends in the regional economic situation in terms of production, sectoral structure, employment, population, labour force and sustainability. To achieve this, regional economic models will have to be developed to predict how the Wadden Sea Region can adapt to global trends in the economy, to external developments such as climate change or to shocks such as the credit crisis. Scientific knowledge can also contribute to the sustainability of the Wadden Sea Region's economic structure. Central questions are how to provide sufficient employment and income, a pleasant social climate for residents and care for the region's natural and scenic values, which are also enjoyed by visitors. It is therefore vital to ascertain why firms, individuals and households decide to base themselves in the region and to develop sustainable forms of business. Another important contribution from the discipline of economics is the use and further development of the social cost-benefit analysis (SCBA) as a policy and decision-making tool for assessing whether or not interventions in the Wadden Sea Region can be allowed.

6.5 Urban and rural planning

The Wadden Sea Region shows a diversity of subareas, where either ecological value or economic value predominantly determines human use. Extensive monofunctional natural and cultivated areas alternate with highly dynamic centres for holidays and leisure, port activities and industry. The Wadden Sea Region therefore has a strict separation of functions and functional areas, which means that 'conservation' is appropriate in one area and 'development' in another. Yet there is an increasing demand for coherence and multifunctionality. In the Wadden Sea Region, this demand mainly occurs at the interface between nature and leisure/care and between agriculture and leisure/care. Given this demand, a defensive strategy focusing on further separation of functions and emphasising preservation or restoration is not always desirable. New opportunities can be found, particularly where an area is suitable for the combination of protecting natural or historic values on the one hand, and developing functions on the other hand. With a change in political and administrative thinking, this will switch from approval planning (no, unless...) to development planning (yes, provided that...). Protection 'per se' and protection 'no matter what' will no longer be practised in all cases and will more frequently be weighed against possibilities for area-specific development. Against this background, more knowledge is needed on how to interweave functions and how to develop areas in a multifunctional way focusing on combining the area's ecological and economic qualities. In this way, emphasis is placed on the Wadden Sea's connecting role, spreading the pressure of leisure activities, investing in quality of life and the function of transitional areas. This means that government bodies, private parties such as property developers and farmers, and nature conservation organisations

will have to join forces to implement regional coordination. Improved regional governance is facilitated by an analysis of underlying conditions, coordination issues and requirements from a 'multi-level', 'multi-actor' and 'adaptive governance' perspective.

6.6 Climate and water

To gain a proper understanding of climate change in the Wadden Sea Region, four research areas have been identified. First, more detailed studies of regional greenhouse gas emissions are required. How can the relevant processes be explained? To provide a complete understanding, such studies will have to be linked to ecological studies and models of primary production and decomposition and also to the net transport by tidal flows to the North Sea. This must enable us to better estimate how the management of rivers, the coastal zone and the Wadden Sea affects these emissions. Second, it is important to produce good region-specific scenarios for climate change and sea-level rise as a basis for impact studies and the design of adaptive measures. Cooperation with German climate institutes will be needed for this. For the decades to come, the uncertainty in global climate scenarios is small enough to allow downscaling to the Wadden Sea Region. Designing no-regret adaptation measures should be based on a thorough exploration of extremes in scenarios for climate and sea level trends. The main questions relate to the interface between the rate of future sea-level rise, the danger of drowning of the tidal flats and the role of natural climate buffers and sand suppletions in guaranteeing safety. Third, much more knowledge is required with regard to the possible impacts of climate change on the morphology, water management and ecology of the Wadden Sea Area and the robustness and resilience of existing natural and human systems. Finally, innovative and robust adaptive measures will have to be developed, based on this understanding. Cooperation across natural science disciplines is essential for the themes 'impacts' and 'adaptive measures'. Climate adaptation also requires a substantial catching-up exercise by socio-economic, planning and governance research disciplines.

7 An integrated research agenda

There is a substantial disciplinary knowledge base on the Wadden Sea Region, but – as indicated above – major gaps in this knowledge also remain. It is further noted that the existing knowledge and expertise is fragmented and compartmentalised. The lack of an interdisciplinary approach hinders the understanding of the Wadden Sea Region as a coherent and open system. In a systems approach, different elements, features and processes of a (linked natural and socio-economic/cultural) system are explicitly connected to one another. The emphasis is on revealing feedbacks between different processes and subsystems, on the dynamics controlled by these feedbacks and on the interplay between processes occurring in different space and time scales.

In the Wadden Academy's view, an integrated approach is required to enable us to understand the Wadden Sea Region in the short, medium and long term at system level. According to the Wadden Academy, research can be described as 'integrated' if it satisfies the four criteria below:

- it shows a combination of two or more disciplines with the emphasis on crossing the boundaries between natural science, social science and humanities;
- it takes into account the interplay between processes at different temporal and spatial scales;
- it takes into account the accumulation of processes, interventions and impacts;
- it is based on the co-production of knowledge, where the formulation of knowledge demand, the production of knowledge and the use in management result from close interaction between scientists, government experts and policy makers.

Obviously, the emphasis on an integrated approach in the research agenda does not preclude disciplinary, in-depth and curiosity-driven scientific research in the Wadden Sea Region. The Wadden Academy also wishes to stimulate this type of knowledge development in collaboration with universities and research schools and link it to the wider need for administrative, political, social and policy-related knowledge of the Wadden Sea Region.

The following cross-disciplinary research themes have been identified:

- people as a geological force;
- sediment balances of sand and mud and the role of ecosystem engineers;
- sea-level rise, changing storm regimes, tidal flat morphology and the use of natural processes as coastal defences;
- paleo-ecological reconstructions of the food web;
- reflections on the paradox of (nature) conservation in a changing world, from the points of view of natural and social sciences;
- the impact of people and their activities on climate, land, water and nature over the past 2,500 years, as well as in today's Wadden Sea Region;
- regional economic developments in the light of external trends such as climate change;
- development of employment and income in relation to conservation of natural and cultural-historic values;
- sustainable economic development, the culture of entrepreneurship and social cohesion;
- economic valuation of use (consumption and production) and non-use values of nature and culture in the Wadden Sea Region;
- tidal flows, geomorphology, ecology and greenhouse gas emissions;
- human management of rivers, the coastal zone and the Wadden Sea and greenhouse gas emissions;
- (conceivable extremes in) climate trends and the design of robust adaptive measures;
- climate change effects on geomorphology, water management and ecology;
- governance and the design and implementation of adaptive climate measures.

8 Research in the Wadden Sea Region from an international perspective

The three countries in the Wadden Sea Region – the Netherlands, Germany and Denmark – have national and regional policies to protect the major natural values in the region. In 2009, the Dutch and German Wadden became a World Heritage Site. Joint initiatives have been developed to make an inventory of the region's nature and environment and its cultural and scenic heritage. Both the natural values and the rich history of human use of the region played a part in the nomination of the Wadden Sea as a World Heritage Site. The harmonisation and coordination of this policy has been set out in the trilateral convention to protect the Wadden Sea. In addition, at a European level, the three countries are bound by common EU legislation, such as Natura 2000 and the Water Framework Directive. Despite the agreement on general principles and the common legal framework, there are regional and national differences in the management regime. These differences generate interesting comparative material for studies of the impact of policy on natural values.

Scientists from the three Wadden Sea countries have been cooperating for fifty years. Changes in the worldwide environment, human activities, the legal regime and the socio-political situation call for new international research initiatives. New research could form the basis for the integrated management of the ecosystem in the Wadden Sea as a whole in line with European legislation and taking account of sustainable shared human use.

At the trilateral level, much has already been achieved regarding common monitoring and assessment. Recently, initiatives have been started to intensify and computerise the monitoring of nature and the environment. The harmonisation and integration of these

efforts could create a 'shared workspace' for the Wadden Sea as a whole as a basis for excellent research. Common European legislation and climate change are also making new demands.

Although it can be stated in general that research benefits from international embedding, particular emphasis is placed by the research agenda on cooperation on the following topics:

- 1 subsurfaces and natural resources;
- 2 ecological interactions within the Wadden Sea ecosystem and between the Wadden Sea, the North Sea and the various rivers;
- 3 research into the global importance of the Wadden Sea;
- 4 consequences of climate change for the Wadden Sea ecosystem and comparable estuaries elsewhere;
- 5 cultural history and society within the Wadden Sea Region;
- 6 economic trends, developments and planning;
- 7 policy, management and methods and, where possible, harmonisation of the approach.

9 Research programmes

The Wadden Academy is proposing a limited number of large-scale umbrella programmes for multidisciplinary research. These are divided, on the one hand, into three large generic knowledge programmes (the three bold horizontal bars in the diagram) the aim of which is to collect and disseminate essential scientific results needed to fully understand the operation of the integrated Wadden system. This research is relevant for social and political questions but is performed at a fundamental level which is usually outside the scope of demand-driven research. On the other hand, three large, more integrated, research programmes are proposed (the vertical bars) which relate to today's most pressing management problems. In addition to this, two conditional themes have been defined (expert training and international cooperation) as further supporting horizontal bars. All programmes are characterised by (see central circles) an interdisciplinary approach, international cooperation and comparison, effective interaction between knowledge demand and supply and connections between different scales of time and space. Information, data, knowledge and expertise are exchanged at the interface between the horizontal and vertical programmes.

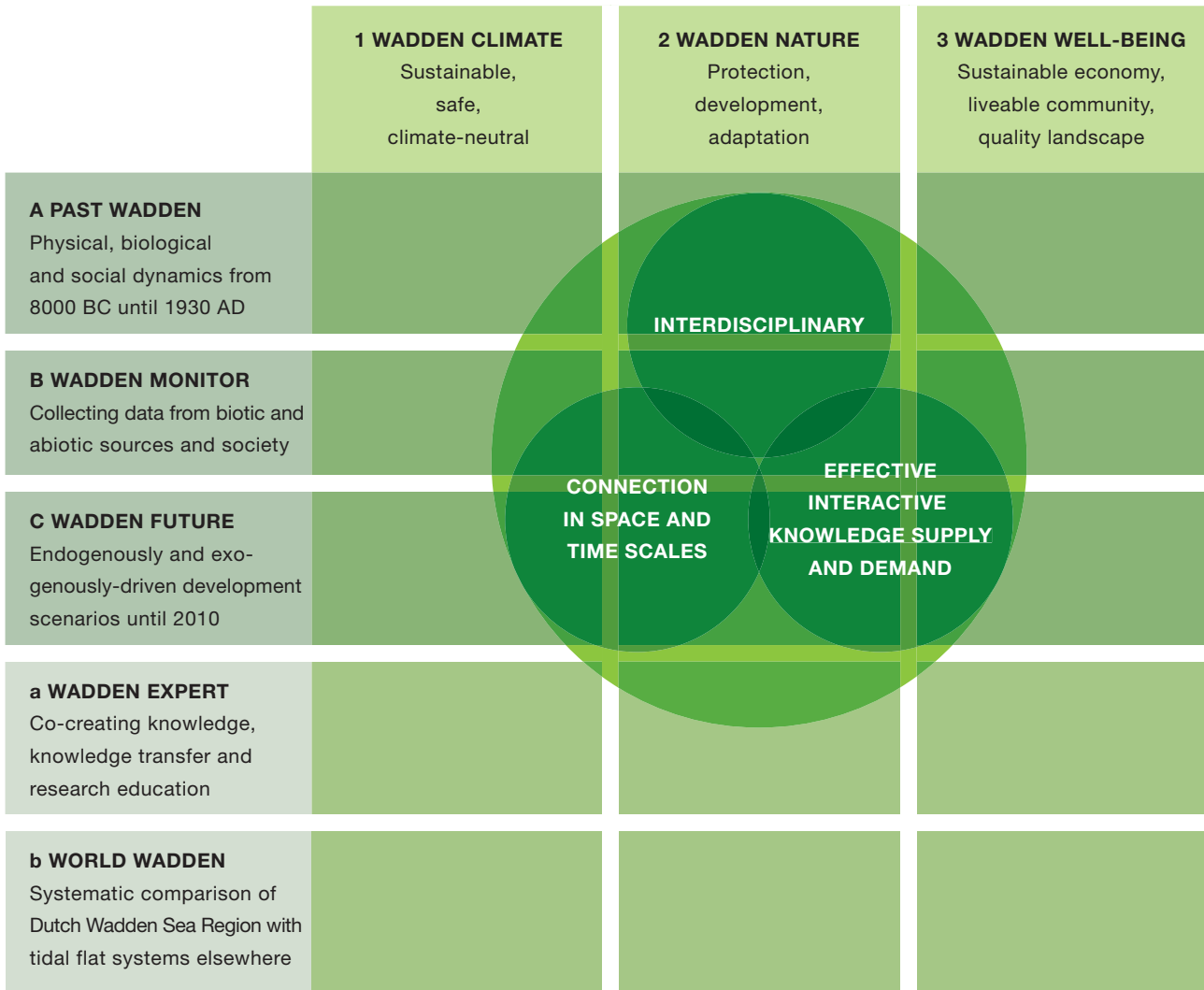
Together, the six programmes plus the two themes constitute the overall field of research for the Wadden Sea Area and Wadden Sea Region. They are long-term programmes. The knowledge programmes are as listed below:

A. Past Wadden: reconstructing the development of the Wadden Sea Region

The aim is to gain an understanding of the climatological, geological, ecological, economic and sociocultural dynamics of the tidal flat system between the end of the Pleistocene (8200 BC) and the construction of the IJsselmeer Dam (1932). Of necessity, the programme uses proxies for climatological, paleo-geographical and paleo-ecological reconstructions and those of man-made environments.

B. Wadden Monitor: monitoring the development of the Wadden Sea Region

The aim is to gain an understanding of the natural and social dynamics of the tidal flat system from 1932 (the closing off of the Zuiderzee) up to and including 2015 (the date on which several of the current monitoring programmes end). The programme focuses on the systematic collection and long-term supply of quantitative data for the entire Wadden Sea Region which are relevant to the various disciplines.



C. Wadden Future: predicting the development of the Wadden Sea Region until 2100

The aim is to understand and predict the development of the tidal flat system between 2010 and 2100. Conceivable, diverse scenarios for the development of the Wadden Sea Region will be based on multiple trend analyses and quantitative process models and will be updated as new information comes to light.

a. Wadden Expert: knowledge co-creation, knowledge transfer and training a new generation of Wadden Sea experts

The Wadden Academy's aspiration is to improve knowledge valorisation. Our aim is to achieve intensive interaction (co-creation) between scientists, governmental experts and policymakers at all stages in the knowledge development cycle. As part of this theme, the Wadden Academy has reserved itself the role of central knowledge broker, facilitator of multidisciplinary expert teams, organiser of education and training courses for public officials and management bodies, and of the joint initiator of an information system on the Wadden Sea Region. Finally, the Wadden Academy will participate in the transfer of knowledge to the general public, officials and policymakers, students and researchers.

b. World Wadden: the international study of the Wadden Sea Region

The aim is to systematically compare the Dutch, German and Danish parts of the Wadden Sea Region and to compare with intertidal areas elsewhere in the world. The focal points are: cooperation, coordination, prioritising, fund raising and knowledge dissemination.

An important position is occupied by the three integrated research programmes which are strongly demand-driven, tackle major societal issues and are therefore relevant to policy making and evaluation without lapsing into research with a limited perspective in terms of time and space. Below are the main issues and possible items for each programme.

1. Wadden Climate: the Wadden Sea Region sustainably safe and climate-neutral

Sustainably Safe: How can the safety of the Wadden Sea Region and its population be guaranteed in the long-term, also taking into account the possible harmful effects of climate change and sea-level rise? Can this be achieved in a way that preserves the natural and dynamic character of the region? Can large-scale interventions in the coastal zone – such as sand suppletions – make a positive contribution to the development of marine and terrestrial natural values?

Climate-Neutral: How can a sustainable energy balance for the Wadden Sea Region be realised, taking into account the region's specific values? There is a desire to exploit the potential of the Wadden Sea ports for transporting energy and bio-energy raw materials and for energy production, also making sensible use of residual heat, as well as the options for CO₂ storage in gas fields, the exploitable geothermal energy in the region and the energy potential of tidal and fresh-to-salt transitions. The most promising options, from the point of view of electricity generation and heat exploitation, is found in the coastal zone of the Wadden Sea Region. At the same time, the vast, open landscape, the natural environment and the tidal dynamics are values that must be cherished and protected. There are many knowledge gaps in the tension between the desire to create innovative 'energy landscapes' and to preserve natural and cultural-historic values.

2. Wadden Nature: protecting, developing and adapting the natural environment

Protection: What forms of (shared) use will affect the development of the natural environment and will it be possible to adjust them if they are found to be harmful? How can the value of the Wadden Sea in the world ecosystem be safeguarded?

Development: How can the management and landscaping of the Wadden Sea Region make an optimum contribution, on a scale of decades, to the natural quality of water flows, geomorphology, benthic processes, water, air and soil quality, and flora and fauna? Which developments will guarantee the highest natural values in the long-term, what are the essential characteristics of the natural values and which developments are possible within the (altered) constraints?

Adaptation: How will global change (climate change, introduction of invasive species, changes in the global economy) affect the natural environment in the Wadden Sea and how can the direction of the development of nature be adjusted?

3. Wadden Well-being: sustainable economy, liveable community and quality landscape in the Wadden Sea Region

Sustainable economy: How can work, income and quality of life for the residents of the Wadden Sea Region be guaranteed in a sustainable manner? How do we take account of the resilience within the system and of exogenously-driven changes in the regional and global economy? Is it possible to use minerals and geothermal energy sustainably in the light of climate change and sea-level rise, and if so, how?

Liveable community and quality landscape: How can the residents of the Wadden Sea Region be guaranteed a pleasant social environment, in view of the priority given to natural values in the region and in view of radical demographic, economic, socio-economic and cultural processes that extend far beyond the region? In this context, quality of life is interpreted in terms of social cohesion, a recognisable and vital man-made landscape and living heritage.

10 Implementing the research agenda

The research agenda will be implemented in different phases. These phases, some of which run in parallel, are consistent with the approach of the Wadden Academy to foster cooperation between, and involvement of, all parties from academia, policy and society.

Over two hundred of the main players from universities, research institutes, government agencies and non-governmental organisations have played a part in drawing up the research agenda. The Wadden Academy intends to update the research agenda regularly on the basis of the latest scientific insights and results and in the light of new policy developments.

Phase 1. Communication and feedback

During this phase, immediately after 30 May 2009:

- the dissemination of the research agenda is key;
- a wide-ranging consultation will follow (also by establishing a digital platform);
- a conference will be organised on 1 and 2 July 2009 to programme research for the future;
- knowledge groups will be established in the departments involved.

Phase 2. Drawing up plans to implement the programmes and projects

In the second phase, from 1 July 2009, it will be possible to form a multidisciplinary team around each research programme and each integrated demand-driven project. The Wadden Academy will facilitate the forming of the teams. The teams will be responsible for developing the programme or project in an implementation plan. The plan will contain a description of the societal demand, the scientific approach, a summary of subprojects, a work schedule and a budget.

Phase 3. Mobilising financial resources

The third phase involves financing. Two financing options are available for implementing programmes and projects: funds with a special relationship with the Wadden Sea Region (Wadden Fund, NWO-ZKO) and programme financing by ministries and research institutes. In the case of funds, applications can be submitted; the allocation or re-allocation of programme resources of ministries and research institutes will involve an interactive and iterative process, in which the Wadden Academy will assume the role of knowledge broker.

Henceforth, the Wadden Fund Advisory Committee will be involving the integrated research agenda of the Wadden Academy in the consideration and assessment of research projects submitted. To date, most of the research relating to the Wadden Sea Region has been funded from public funds, except for the active involvement of Nederlandse Aardolie Maatschappij (NAM). The Wadden Academy is actively seeking opportunities to involve more private market players in the Wadden research infrastructure, including the major energy companies and the financial sector.

Phase 4. Internationalisation

In the fourth phase (from the second half of 2010), we will be actively seeking options for getting the research programmes accepted and funded as a trilateral arrangement and at EU level. The Wadden Academy will have a facilitating role in this process. A trilateral agency/research forum is being organised with major public research funders in Germany, Denmark and the Netherlands in association with the International Wadden Sea Secretariat in Wilhelmshaven, Germany. Together with German and Danish colleagues, we are investigating opportunities in the EU framework programmes and in EU Interreg programmes.

Phase 5. Evaluation and summary

In the fifth phase (early 2014), an independent audit and progress evaluation will be organised. The Wadden Academy and its partners will summarise the objectives of the research agenda which have been achieved.