



**THE SUSTAINABILITY PROFILE**  
OF THE UNIVERSITY OF OLDENBURG  
*Coast – Energy – Society*



# IMPRINT

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## SUSTAINABLE DEVELOPMENT IN THE COASTAL REGION: GLOBAL CHALLENGE AND REGIONAL PROFILE



More than half of the world's population lives in coastal regions. It is here that the effects of accelerated climate change have already

made themselves clearly visible. Yet at the same time the coastal regions are the key focus of a growing global (maritime) economy network with the potential to increase the renewable energy quota to 20%. Enhanced wind energy production in both onshore and offshore wind farms and the integration of new energy into existing energy systems are key factors of this development process.

Environmental protection and sustainable development have been a central focus of the research and teaching agendas of the University of Oldenburg since its establishment. Located in the vicinity of the North Sea coast, Oldenburg has pioneered marine research (especially in shallow water and coastal research) and renewable energies research.

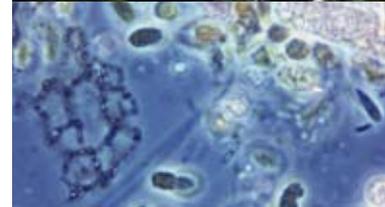
Parallel to these core competencies in the field of natural science, Oldenburg's ecological research activities have reached out to include the economic and social sciences, information technology, education research and other disciplines.

The sustainable development research activities at the University of Oldenburg were amalgamated to form the COAST Science Centre in 2005. COAST's mission is clear: to make the University of Oldenburg a leading centre of trans-disciplinary research and study in Germany and at the same time maintain its pronounced coastal focus.

In this brochure we would like to provide a comprehensive overview of sustainable development research and study opportunities at the University of Oldenburg.

We hope you enjoy it.

Prof. Dr. Uwe Schneidewind  
President



## *Trans-disciplinary research – what it means.*

*Trans-disciplinary research delivers solutions to problems of societal development.*

*In order to provide the targeted impact this research approach has to be interdisciplinary and unite a whole range of scientific disciplines. In addition, it involves the contributions of non-academic players in order to attain a high level of implementation for the solutions it generates. Only such an approach enables the development of successful adaptation strategies in response to climate change (p. 8) or the development of sustainable nutritional standards (p. 14).*

*The University of Oldenburg prides itself in being a centre for the further development and quality assurance measures of trans-disciplinary research approaches.*

## THE UNIVERSITY OF OLDENBURG AND SUSTAINABLE DEVELOPMENT VISION – FOCUS – SCIENTIFIC RESOURCES



The concept of sustainable development that emerged out of the UN Bruntland Report of 1987 has itself undergone a 20 year development process and has become a key term of reference for societal development.

Since its establishment in 1973 the University of Oldenburg has upheld a commitment to a comprehensive approach to environmental research. Today it can draw on over 30 years of problem-orientated, interdisciplinary

environmental and societal research. The sustainability strategy of the University of Oldenburg is based on the following principles:

The sustainable development research in Oldenburg is directed towards **ecologic problem settings** and their societal and economic implications.

The main research focus concentrates on **two application fields** that are closely linked to the characteristic coastal environment of the University: since its

establishment Oldenburg has been engaged in high-level research activities and degree courses in **marine and coastal research** and **renewable energies research**.

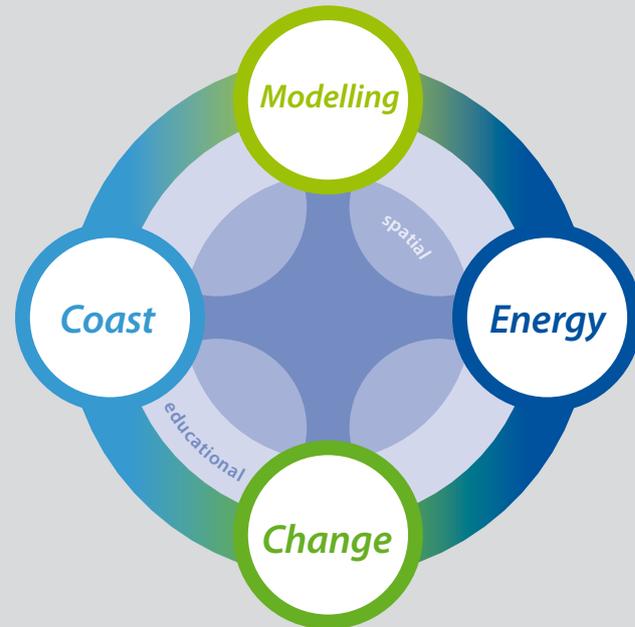
These two focal areas are the basis for the University's ambition to not only to contribute substantially to the key development agenda of Northwest Germany but also to topics of inquiry of global relevance.

The methodical objectives in both focal areas are characterized by problem-orientation and interdisciplinary cooperation. The University of Oldenburg aims to contribute to the methodical development and quality assurance processes of trans-disciplinary sustainable development research and study. Two installed **methodical approaches** underline this endeavour: **environmental modelling** and economic and societal **change process analysis**.

The four interlinked focal areas of the Oldenburg sustainable development research agenda are complemented by the spatial perspective and the educational science perspective.

Each of the focal areas is presented from page 8 onwards.

## FOCAL AREAS OF OLDENBURG SUSTAINABLE DEVELOPMENT RESEARCH – CONTENT-METHOD INTERACTION





### COAST SCIENCE CENTRE HOME OF OLDENBURG SUSTAINABILITY RESEARCH AND STUDIES

In line with the strategic role played by sustainability development at the University, the COAST Science Centre acts as an umbrella organisation for all sustainability-related activities. COAST pools the resources of scientists from a wide range of disciplines: physics, chemistry, biology, mathematics, geosciences, landscape ecology, information technology, social sciences, economics and law.

COAST fulfils several roles:

- The centre provides a platform for *interdisciplinary research* projects of the associated institutes and for the interaction with external partners in interdisciplinary projects.
- The centre acts as a resources pool in structuring the various *Masters degree courses* related to sustainable development and acts as a proficiency network for the relevant Bachelor courses. Hence students are confronted with interdisciplinary exchange at an early stage of their university careers. This is a key factor in making Oldenburg an attractive place to study.

- COAST is responsible for *communicating* the University's sustainable development strategy to external stakeholders. The name serves to underline the coastal focus of the University's sustainability activities. By setting up an umbrella organisation the Management Board has committed itself to the strategic role of sustainable development in the overall profile of the University.
- The centre organises scientific *colloquiums* and transfer events for the University and the general public.

COAST also has the function of coordinating the sustainable development and environmental activities of its member research institutes, in particular the *Institute for the Chemistry and Biology of the Marine Environment ICBM*, the *ForWind* research centre, *the Centre for Environmental Modelling CEM* and the *CENTOS Oldenburg Center for Sustainability Economics and Management*. Each of these institutes has developed to centres of excellence in their focussed research areas; their activities extend beyond narrow understandings of sustainability research. The high disciplinary and interdisciplinary performance rates of the member institutes are the main pillars that support COAST's trans-disciplinary ambitions.

**COAST SPECIALISATION AREAS:  
MEMBER INSTITUTES AND SCIENCE CENTRES**

*ICBM Institute for the Chemistry and Biology of the Marine Environment*

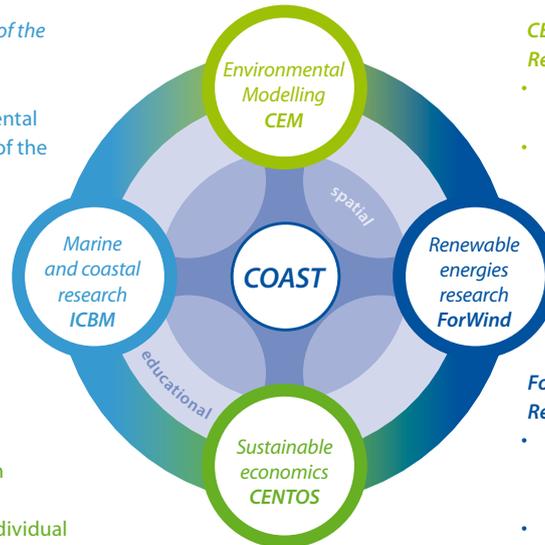
**Research focus:**

- Mathematical-natural science environmental research of the eco and climate systems of the shallow sea and coastal regions
- Applied science in the fields of marine technologies and sustainable development related to coastal zones

*CENTOS Oldenburg Centre for Sustainability Economics and Management*

**Research focus:**

- Environmental and resource economics; ecological economics
- Economics of sustainability research with emphasis on cultural science approach
- Sustainability learning processes with individual and societal focus
- Sustainability-orientated innovation research and Sustainable Supply Chain Management
- Environmental politics and environmental law
- Business and corporate ethics



*CEM Centre for Environmental Modelling*

**Research focus:**

- Insights into the spatial and temporal development of complex ecological systems
- Management of ecological systems and resources

*ForWind Centre for Wind Energy Research*

**Research focus:**

- Active research and development in areas such as offshore meteorology, wind performance forecasting, life expectancy forecasting and grid connections
- Services and products for the wind energy sector and the changing energy market (analyses/studies, software solutions and consulting)



*ICBM key data*  
 Scientists: approx. 120  
 Third-party funding  
 since founding in 1987: 50 Mio. €  
[www.icbm.de](http://www.icbm.de)



## MARINE AND COASTAL RESEARCH IN THE FACE OF CLIMATE CHANGE

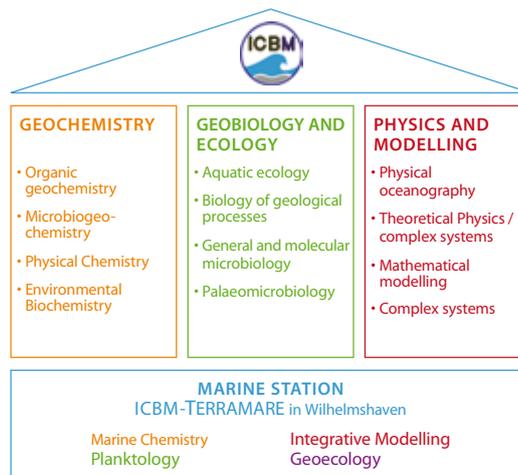
The coastal regions are areas where the dimensions of climate change are particularly visible and their vulnerability grows with the increase in the use of marine resources and new forms of marine pollution. Hence Oldenburg has focussed on coastal research as the core of its sustainability orientated marine research. With the shallow water region of the North Sea and the extensive Wadden Sea on its doorstep Oldenburg is predestined to pioneer coastal research. The establishment of the **ICBM Institute for the Chemistry and Biology of the Marine Environment** in 1987 provided an appropriate research framework.

With a staff of almost 120 ICBM's interdisciplinary research activities are dedicated to the role played by shallow seas and coastal areas in the Earth system. ICBM is the only university marine research institute in the State of Lower Saxony.

At ICBM researchers from the fields of geochemistry, geobiology and ecology, physics and modelling are organized in eleven different working groups that investigate a range of bio- and geochemical, ecological and environmental issues.

ICBM's infrastructure includes a marine station in Wilhelmshaven located at the TERRAMARE Centre for

Research on Shallow Seas, Coastal Zones and the Marine Environment. The station provides laboratories and equipment for the field research conducted by ICBM and the other partners in the TERRAMARE research consortium.



In the light of future challenges ICBM and TERRAMARE were merged on January 1, 2008 to focus the region's marine research capacities.

## COASTAL PROTECTION AND RESOURCES DEPLOYMENT

Parallel to the pursuit of fundamental research ICBM has prioritized its involvement in projects designed to promote the sustainable development and deployment of marine and coastal areas. ICBM's success in this field is based on close cooperation with business, politics and society representatives and widespread dissemination of the project results. Areas where scientific support has been successfully implemented include combating oil spills (strategic reaction strategies), offshore wind energy development, the development and use of marine crops and coastal protection strategies. The communication of insights into these ecological processes combined with customized consultancy services are targeted to implementing a sustainable management of marine and coastal zones.

In addition to ICBM's activities the **Institute for Biology and Environmental Sciences IBU** at the University of Oldenburg is engaged in research of the semi-terrestrial and terrestrial ecosystems of the Wadden Sea and the coast. Here the main focus is placed on the biodiversity of the islands and the coastal mainland, matter dynamics and

### SELECTED KEY PROJECTS

**Research group**  
**Biogeochemistry of the Wadden Sea**  
 Contact: Prof. Dr. Jürgen Rullkötter  
 Project duration: 2001 - 2009  
 Funding from DFG and the State of Lower Saxony: 9,5 Mio. €  
[www.icbm.de/watt](http://www.icbm.de/watt)

**Combined functions in coastal defence zones – ComCoast**  
 Contact: Dr. Thomas Klenke  
 Project duration: 2004 - 2008  
 EU funding: 5,6 Mio. €  
[www.comcoast.org](http://www.comcoast.org)

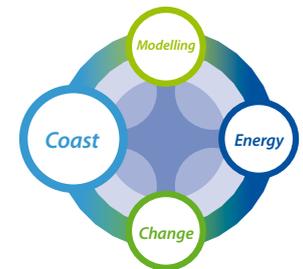
**Integrated Ocean Drilling Program (IODP)**  
 Contact: Prof. Dr. Hans-Jürgen Brumsack  
 Project duration: 2001 - 2010  
 DFG funding: 3,8 Mio. €  
[www.icbm.de](http://www.icbm.de)

**Roseobacter**  
 Contact: Prof. Dr. Meinhard Simon  
 Project duration: 2005 - 2009  
 Funding from DFG, State of Lower Saxony and others: 2,7 Mio. €  
[www.icbm.de](http://www.icbm.de)



hydrology of marsh and dune soils, functional coastal vegetation ecology and the ecology of marsh waters.

These activities involve a range of diversified working groups including Terrestrial Ecology, Soil Science, Water Body Ecology, and Functional Plant Ecology together with the new professorships for plant biodiversity and evolution biology and animal biodiversity and evolution biology.



## FROM WIND AND SOLAR ENERGY ...

### *ForWind key data*

*Scientists:*

*22 in Oldenburg (50 in total)*

*Third-party financing: approx. 2 Mio. € / p.a.  
www.forwind.de*

### *OFFIS key data*

*Scientists in energy research: 15*

*Third-party financing 2006: approx. 8.2 Mio. €  
www.offis.de*

### *Physical energy research key data*

*Staff: 105*

*Third-party financing  
since 2003: 15.6 Mio. €*

*<http://ehf.uni-oldenburg.de/index.html>*

The deployment of renewable energies constitutes a radical change in our energy supply. The University of Oldenburg boasts a long tradition in renewable energies research.

Oldenburg's research focus is directed towards the **natural science base** of renewables and technical and economic **systems optimization**.

The energy and semi-conductor research at the Oldenburg Institute of Physics includes both fundamental research in semi-conductor physics and applied research in renewable energies.

At **ForWind**, a wind energy research centre of the universities of Oldenburg and Hannover, research and development work is conducted in almost all aspects of wind energy installations, e.g. offshore meteorology, wind performance forecasting, life expectancy prognoses and grid connections. In addition ForWind provides services and products for the wind energy sector and the changing energy market. These include software solutions and consulting services. ForWind also acts as a link between research and industrial applications and provides training and further education concepts.

The rapid growth in the deployment of decentralized and renewable energy resources poses major challenges to the whole energy supply system: decentralisation is the key to energy restructuring.

**Energy information technology** in Oldenburg has addressed the information and communication technology issues of the energy sector for many years.

Future decentralized energy management systems (DEMS) will need to control hundreds of thousands of decentralised small-scale production units such as combined heat and power plants, photovoltaic installations or fuel cells and simultaneously manage intermittent feed-ins from wind farms. "Virtual power stations" can link small-scale energy producers to specific consumer needs and thereby create new perspectives for energy planning and distribution.



## ... TO TOTAL SYSTEMS INTEGRATION

Implementing this vision will rely on new methods of load management, new techniques for predicting feed-in and load levels and new standards for the IT-integration of energy production units.

The university's contribution to systems integration is based on its energy information technology resources. The **Oldenburg Research and Development Institute for Information Technology Tools and Systems (OFFIS)** is involved in a number of projects on future energy supply systems such as the **EWE-DEMS consortium** and the **Lower Saxony Energy Research Consortium (FEN)**.

**Energy economics** analyses the economic effects of changes in energy systems and develops energy policy recommendations from the economic perspective.

In order to maximize on its resources the University of Oldenburg has adopted a cooperation policy, which, for example, allows ForWind to draw on the engineering resources of the University of Hannover.



## SELECTED PROJECTS

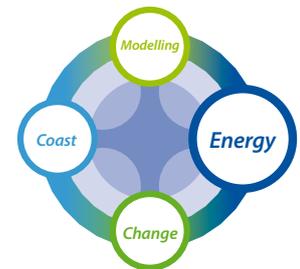
**EWE Young Scientists Group  
Thin Film Photovoltaics**  
Contact: Prof. Dr. Jürgen Parisi  
Project duration: 2007 - 2016  
Total volume: 12.750 Mio. €

**DEMS Research Group  
Decentral Energy Management Systems**  
Contact: Prof. Dr. Hans-Jürgen Appelrath  
Project duration: 2004 - 2008  
Funding: Industry  
[www.energieinformatik.de](http://www.energieinformatik.de)



**Lower Saxony Wind Energy Research  
and Competence Centre**  
Contact: Prof. Dr. Joachim Peinke,  
Dr. Detlev Heinemann  
Project duration: 2004 - 2008  
Funding: MWK  
Total volume: 2,5 Mio. €

The involvement of the utility company EWE AG and the establishment of the **EWE Research Centre for Energy Technology** at the University of Oldenburg in 2007 are targeted to developing new interdisciplinary approaches to energy generation and supply.



## CEM key data

Scientists: approx 20

Third-party funding since 2001: 3.8 Mio. €

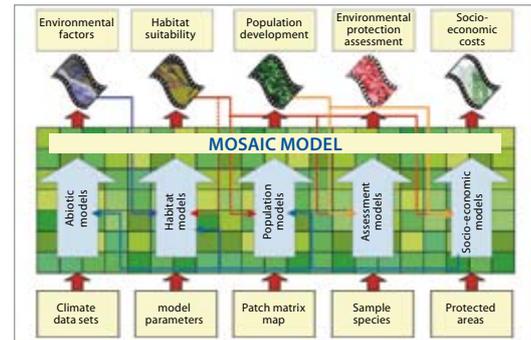
[www.cem.uni-oldenburg.de](http://www.cem.uni-oldenburg.de)



## ENVIRONMENTAL MODELLING

The **CEM Centre for Environmental Modelling** is an interdisciplinary platform that hosts scientists from several institutes: Biology and Environmental Sciences, Chemistry and Marine Biology, Mathematics, Physics and Political Economics together with the Department of Information Technology. The emphasis of the centre's research activities focuses on the analysis of spatial and temporal development of complex ecological systems as they react to natural and human-related environmental changes and also the management of ecological systems and resources.

Ecological processes are characterized by strong interactions between different subsystems such as the biosphere, the oceans, the atmosphere, the hydrosphere and the pedosphere and these are immensely complex. Hence minor disturbances in the ecosystems can under certain circumstances provoke drastic consequences. Environmental modelling develops tools for model building, data analysis, forecasting and decision-making. This development work is facilitated by cooperation between scientists from different disciplines and in many cases via a dialogue with society stakeholders.



Research methodology is focussed on four model types:

- Process models to simulate and analyse environmental dynamics in space and time
- Statistical models to analyse the interdependencies between different environmental parameters or between environmental and economic parameters
- Data models displaying space and time progression, e.g. geographical information systems
- Integrative models to support societal decision-making processes

## THE COMMON LANGUAGE OF OLDENBURG SUSTAINABILITY RESEARCH



The analysis of environmental systems demands close cooperation with environmental economists in order to assess the societal and structural repercussions of environmental protection measures and the economic consequences of environmental change. Hence the Centre for Environmental Modelling provides methodological development and transfer support to other projects, for example in linking ecological and economic models.

### EXAMPLES OF CEM INTERDISCIPLINARY PROJECTS

#### **LEDA**

*Database of the functional characteristics of northwest European flora*

Contact:

Prof. Dr. Michael Kleyer

Project duration:

11/2002 - 10/2005

[www.leda-traitbase.org](http://www.leda-traitbase.org)

Förderung:

Funding: EU 5<sup>th</sup> Research

Framework Programme

Total volume: 2,1 Mio. €

#### **Modelling of key Wadden Sea processes and tidal influences**

Contact:

Prof. Dr. Ulrike Feudel

Project duration:

05/2007 - 04/2009

[www.icbm.de/komplsys](http://www.icbm.de/komplsys)

Funding: DFG

Total volume: 140.000 €

#### **AQUASHIFT**

*Climate change influence on the ecosystems of seas and oceans*

Contact:

Dr. Jan Freund

Project duration: 07/2007 - 06/2010

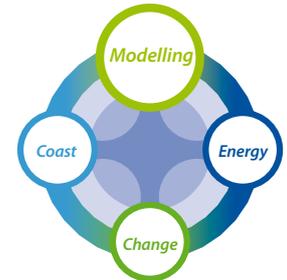
[www.ifm-geomar.de/index.php?id=1985](http://www.ifm-geomar.de/index.php?id=1985)

Funding: DFG

DFG-Priority-Programme

Total volume: 100.000 €

Modelling is always based on the evaluation of comprehensive measured data. In order to assess the validity of the developed models, direct access to the empirical observations is essential. Close interaction between the modelling activities and the experimental work of institutes involved is a decisive feature of COAST, which enhances, for example, the analysis of geochemical processes in the Wadden Sea and the vegetation diversity of the northwest German coastal area.



## SUSTAINABLE ECONOMICS – ANALYSIS AND PROCESS DESIGN

### *CENTOS key data*

*Scientists: approx. 25*

*Third-party funding since 2002: 6.5 Mio. €*

*[www.centos.uni-oldenburg.de](http://www.centos.uni-oldenburg.de)*



Sustainable development is a challenge that extends beyond natural science and technical factors. The onus is on designing and initiating a complex societal change process. This is the perspective adopted by the **Oldenburg Center for Sustainability Economics and Management (CENTOS)**.

CENTOS pools expertise and strong infrastructure resources in the fields of environmental economics and sustainability management, that have been developed over two decades at the University of Oldenburg and have gained both nation-wide and international acclaim.

CENTOS specialises in environmental-economic process analyses and the design of learning and change processes in corporate structures and other society groups. Activities are directed towards company networks, new service providers, leasing systems and institutional change as drivers of sustainable development. The political focus is set on the assessment of environmental change processes, the development of policy recommendations backed by analyses of their political-economic determinants and economic consequences.

The CENTOS portfolio includes modern environmental economic strategies and environmental education,

consumer-related life-style aspects of sustainable consumption patterns and trans-disciplinary approaches to innovation and entrepreneurship research.

Current fields of investigation relate to climate protection and energy supply, nutrition, information and communication technologies, the textiles sector and mobility.

### SELECTED PROJECTS

#### **ALICE: Agents' Long-term Investments in the context of Climate and Energy**

Contact: Prof. Dr. Bernd Siebenhüner

Funding period: 03/2007 - 02/2010

Funding: BMBF

Third-party finance volume: 250.000 €

[www.alice-energy.de](http://www.alice-energy.de)

#### **GEKKO: Buildings, climate protection and communication in Oldenburg**

Contact: PD Dr. Niko Paech

Funding period: 08/2006 - 01/2009

Funding: BMBF

Third-party finance volume: 412.000 €

[www.gekko-oldenburg.de](http://www.gekko-oldenburg.de)

*»Oldenburg is the top address for environmental economic research in Germany and at the same time a model case of focussed profiling. No other German university can match Oldenburg's expertise in this field.«  
(Handelsblatt, July 2, 2007)*



The Center's research focal points are the following:

- Environmental and resources economics; ecological economics
- Sustainable economics research from a cultural science perspective
- Sustainability-orientated learning at both individual and societal levels
- Sustainability-orientated innovation research and Sustainable Supply Chain Management
- Environmental politics and environmental law
- Corporate and business ethics



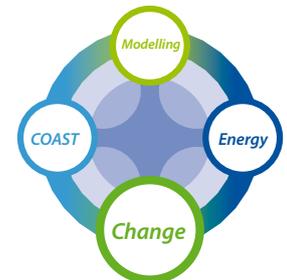
*The OSSENA project- food quality and life quality – is highly convincing due to its grasp of the problem situation and its skill in questioning established patterns of thinking. If this approach is so successful in East Frisia why can't it succeed elsewhere? (aid – Ernährung im Fokus, 01/07)*

**OSSENA: Food quality and life quality**  
 An action approach to analysing and evaluating change perspectives in food cultures  
 Contact: Prof. Dr. Reinhard Pfriem  
 Funding period: 07/2003 - 08/2007  
 Funder: BMBF  
 Third-party finance: 1.100.000 €  
[www.osseana-net.de](http://www.osseana-net.de)

**Sustainability on-the-job training programme for instructors in the tourism sector (NA-FAU-MUS)**  
 Contact: Dipl.-Hdl. Tobias Schlömer  
 Funding period: 08/2006 - 12/2007  
 Funder: European Social Fund Lower Saxony  
 Third party-finance: 49.000 €  
[www.nafaumus.de](http://www.nafaumus.de)

**Environmental resources deployment and demographic change**  
 Contact: Prof. Dr. Heinz Welsch  
 Funding period: 08/2006 - 07/2008  
 Funder: DFG  
 Third-party finance: 66.000 €  
[www.uni-oldenburg.de/wt](http://www.uni-oldenburg.de/wt)

**WENKE<sup>2</sup>: Transition Towards Sustainable Consumption – Energy, Nutrition**  
 Contact: Dr. Irene Antoni-Komar  
 Funding period: 03/2007 - 02/2010  
 Funder: BMBF  
 Third-party finance: 477.000 €  
[www.wenke2.de](http://www.wenke2.de)





### *ZENARIO key data*

*Staff: approx 30*

*Third-party funding since 2005:*

*approx 690.000 €*

*[www.uni-oldenburg.de/raumentwicklung](http://www.uni-oldenburg.de/raumentwicklung)*



## THE SPATIAL PERSPECTIVE – CONNECTING ELEMENT IN SUSTAINABILITY RESEARCH

The sustainable development strategy of the University of Oldenburg is focussed on the specific challenges of the coastal environment. This spatial element is a central strategy component. Currently approx. 30 scientists from the fields of spatial ecology, geography, regional sciences, spatial planning, social sciences, environmental economics, environmental law and planning law represent the spatial perspective though interdisciplinary cooperation at the planned **Center for Sustainable Spatial Development Oldenburg ZENARIO**. The spatial perspective is integrated into all four COAST research fields.

The focal points of ZENARIO's research activities are the following:

- Modern approaches to structuring regional development processes (regional governance)
- Ecological and planning implications on landscape due to the development and deployment of renewable energies (in particular wind energy and biomass)
- Planning contributions and implementation assistance to large-scale environmental protection projects
- Development of strategies for the sustainable management of resources (soil, water, vegetation)
- Modern methods of regional research (in particular GIS, qualitative assessment processes)
- Regional focus on the northwest German coastal area and comparable European areas (e.g. UK, Scandinavia)

### SELECTED PROJECTS

#### *New regional development concepts for peripheral rural areas*

*Contact: Prof. Dr. Ingo Mose*

*Funding period: 2001 - 2006 (follow-up applied for)*

*Funder: DFG*

*Third-party finance: 125.000 €*

*[www.uni-oldenburg.de/raumentwicklung](http://www.uni-oldenburg.de/raumentwicklung)*

#### *Chronosequential property changes of self-restoring post-agrarian soils.*

*Contact: Prof. Dr. Luise Gianì*

*Funding period: 2007 - 2010*

*Funder: DFG*

*Third-party finance: 100.000 €*

*[www.uni-oldenburg.de/bodenkunde](http://www.uni-oldenburg.de/bodenkunde)*

## ENERGY AND SUSTAINABILITY EDUCATION

The University of Oldenburg is one of Germany's key teacher training locations. The integration of environmental and sustainability aspects into basic teacher training and advance programmes has a long history in Oldenburg.

**Sustainable Education** therefore constitutes a further cross-cutting topic on the University's agenda. Its scope includes natural science didactics (biology, chemistry, physics) and social studies, career-specific counselling, economics and political didactics.

Oldenburg is an active partner in three nationwide projects **"Biology, Chemistry and Physics in Context"** and is engaged in developing teaching concepts that integrate sustainability issues into the promotion of assess-

ment competencies on the part of schoolchildren. These activities are backed by the appropriate specialised research and conducted in cooperation with teachers and educationalists.

In 2007 a range of activities related to energy education were grouped together following the set-up of a focussed working group responsible for coordinating joint research with an emphasis on the development of interdisciplinary training programmes on energy and renewables.

The University's teacher training activities complement the approaches to general environmental communication pioneered within CENTOS in projects such as GEKKO (p. 14).



### Key data

Staff: 10

Third-party funding since 2002:

approx. 4 Mio. €

[www.uni-oldenburg.de/histodid](http://www.uni-oldenburg.de/histodid)

[www.chemie.uni-oldenburg.de/didaktik](http://www.chemie.uni-oldenburg.de/didaktik)

[www.uni-oldenburg.de/biodidaktik](http://www.uni-oldenburg.de/biodidaktik)

## SELECTED PROJECTS

### **Biology, Chemistry and Physics in Context**

Contact: Prof. Dr. Michael Komorek,

Prof. Dr. Ilka Parchmann, Prof. Dr. Corinna Höbtle

Funding period: 2005 - 2008

Funders: BMBF and Federal States

[www.uni-oldenburg.de/histodid](http://www.uni-oldenburg.de/histodid), [www.chemie.uni-oldenburg.de/didaktik](http://www.chemie.uni-oldenburg.de/didaktik), [www.uni-oldenburg.de/biodidaktik](http://www.uni-oldenburg.de/biodidaktik)

### **Climate change taken to court – the promotion of assessment competencies of schoolchildren in the context of climate change**

Contact: Prof. Dr. Corinna Höbtle

Funding period: 2007 - 2011

Funder: German Environment Foundation DBU

Volume: 250.000 €





*More information:*  
[www.uni-oldenburg.de/studium](http://www.uni-oldenburg.de/studium)

### **OLDENBURG: HOME OF DEDICATED SCHOLARS**

The University of Oldenburg has a 30-year tradition in environmentally orientated studies and is therefore the right choice for students and teachers who want to initiate change through knowledge and science and contribute to solving urgent societal problems.

COAST and Oldenburg's sustainability research offer such scholars a platform that combines research and degree courses. This inter-connection ensures that researchers continuously input their research results into their teaching programmes. The University offers a whole range of studies with an environmental and sustainability-orientated focus.

#### ***Bachelor, Master and Doctorate degrees***

Oldenburg provides highly diversified opportunities for intensive study of the fundamentals, methods and challenges of sustainable development at all degree levels.

#### ***Bachelor opportunities***

All faculties offer a range of Bachelor courses with a defined sustainable development profile. These are supplemented by an advanced focal module on sustainability, which can be selected by all Bachelor students. The sustainability module acts as an exchange platform for students of all disciplines. The Bachelor course in environmental sciences is specifically tailored to the demands of the Masters courses.



## MASTERS CLUSTER AND DOCTORATE OPPORTUNITIES

### *Masters Cluster Environment and Sustainability*

The central focus of sustainability studies in Oldenburg is the Masters Environment and Sustainability Cluster. COAST coordinates the cluster administration and organizes the exchange between students and teachers for all seven Master courses.

Each Master course has its own profile. Students can choose between application- or research-orientated courses and between English-language courses for an international student audience or predominately German-language courses.

The individual courses are interlinked by special programmes with a specific methodological or issue-related focus. These programmes can be selected by all Masters students in the Sustainability Cluster and can be integrated into individual course profiles. This allows students to match their own qualification profile to their future career or research plans.

### *Doctorate studies*

All working groups involved in environment and sustainability research in Oldenburg offer a wide range of research projects that allow successful Masters students to pursue their doctoral studies. Doctorate courses are designed to implement the selected research projects and provide for academic exchange and advanced methodology competences. The first of these new PhD programme, *Environmental Sciences*, will start in 2008/2009 with more to follow.





## MASTER COURSES

**Environmental Modelling (UMMO)**  
German/English Master course  
(Master of Science)\*\*  
Further information:  
[www.icbm.de/26913.html](http://www.icbm.de/26913.html)  
Contact:  
Ulrike Feudel,  
[u.feudel@icbm.de](mailto:u.feudel@icbm.de)

**Marine Environmental Sciences (MUWI)**  
German/English Masters course  
(Master of Science)\*\*  
Further information:  
[www.icbm.de/16372.html](http://www.icbm.de/16372.html)  
Contact: Jörg Wolff,  
[wolff@icbm.de](mailto:wolff@icbm.de)

**Sustainability Economics and Management (SEM)**  
German/English Masters course (Master of Arts)\*\*  
Further information:  
[www.sustainability.uni-oldenburg.de](http://www.sustainability.uni-oldenburg.de)  
Contact: Bernd Siebenhüner,  
[bernd.siebenhüner@uni-oldenburg.de](mailto:bernd.siebenhüner@uni-oldenburg.de)

**Landscape ecology (LOEK)**  
Master course  
(Master of Science)\*\*  
Further information:  
[www.uni-oldenburg.de/ppre](http://www.uni-oldenburg.de/ppre)  
Contact: Michael Kleyer,  
[Michael.kleyer@uni-oldenburg.de](mailto:Michael.kleyer@uni-oldenburg.de)

## MASTERS CLUSTER ENVIRONMENT AND SUSTAINABILITY

**Water and Coastal Management (WCM)**  
English Master course  
(Master of Science, double degree, University of Oldenburg and Groningen (NL))\*\*  
Further information:  
[www.icbm.de](http://www.icbm.de), Contact:  
Dietmar Kraft, [dkraft@icbm.de](mailto:dkraft@icbm.de)

**Renewable Energies Postgraduate Programme (PPRE)**  
English-language Master course  
(Master of Science)\*  
Further information:  
[www.uni-oldenburg.de/ppre](http://www.uni-oldenburg.de/ppre)  
Contact: Michael Golba,  
[Michael.golba@uni-oldenburg.de](mailto:Michael.golba@uni-oldenburg.de)

**European Renewable Energy Centres (EUREC)**  
English Master course (Master RE)\*  
Further information:  
[www.uni-oldenburg.de/ppre/16160.html](http://www.uni-oldenburg.de/ppre/16160.html)  
Contact: Michael Golba  
[michael.golba@uni-oldenburg.de](mailto:michael.golba@uni-oldenburg.de)

\*3 semester, 90 credit points  
\*\*4 semester, 120 credit points

## STUDENTS FOR SUSTAINABLE DEVELOPMENT



Oldenburg University's sustainability profile is reflected in a wide range of student initiatives. Their focus is set on sustainable development issues, environmental protection and ethics.

Examples:

**sneep** is a student network focussed on business and corporate ethics. The network brings together students of different faculties to address issues of corporate ethics, sustainable business economics or Corporate Social Responsibility (CSR). The Oldenburg branch organises business ethics projects in schools and sustainable consumption projects.

The student initiative also stages discussion forums, workshops and conferences on sustainability and business ethics issues.

The **Environmental Protection Working Group** has its own environmental protection agenda. The topics selected reflect an interdisciplinary approach which prioritises societal factors. Hence the Group's programme is not restricted to ecological considerations but also highlights the ethical and political dimensions of environmental protection.

The **Ecology Department of the Students' Union** is active in promoting sustainable action and every year it organises a car-free day backed by an information campaign on alternative mobility opportunities.

Sustainability also features in a range of other student initiatives. A number of student groups have merged to form the **Oldenburg Students' Forum**, which addresses sustainability issues in various projects. Many students and scientists at the University are also involved in the **City of Oldenburg's Local Agenda** process and in a number of **environmental NGOs**.

*Further information:*

*sneep: [sneep.info/oldenburg](http://sneep.info/oldenburg)*

*Environmental Protection*

*Working Group:*

*[www.uni-oldenburg.de/](http://www.uni-oldenburg.de/)*

*arbeitskreis-naturschutz*

*Oldenburg Students' Forum:*

*[www.uni-oldenburg.de/engagement](http://www.uni-oldenburg.de/engagement)*





## SUSTAINABILITY RESEARCH AT INTERNATIONAL, NATIONAL AND REGIONAL LEVELS – INSTITUTIONAL COOPERATION

The University of Oldenburg is active in numerous international and national networks and consortiums related to *specific research fields*.

Oldenburg participates in many diverse forms of *institutional cooperation* within Europe (especially within the ERASMUS framework) and has been engaged in intensive cooperation with the *University System of Maryland* for over twenty years. This partnership will be extended in the coming years. In July 2007 a *Memorandum of Understanding* was signed, which foresees a strengthening of scientific cooperation in the areas of climate and environmental research and coastal and marine research with a special focus on shallow seas. Additionally, a doctorate programme in Maryland is planned for students who have completed their Masters programme in Oldenburg.

At a national level the University of Oldenburg has built and maintained a cooperation network with those universities and research institutes that have spearheaded the sustainability discussion in Germany over the past 20 years.

These include:

- *The University of Kassel*
- *The Institute for Ecological Economy Research in Berlin (IÖW)*
- *The Wuppertal Institute for Climate, Environment and Energy*
- *The Centre for Environmental Research, Leipzig*
- *The Institute for Applied Ecology, Freiburg*
- *The Potsdam Institute for Climate Impact Research (PIK)*

The cooperation platforms relate to specific research programmes and degree courses and in particular to the further development of trans-disciplinary methodology in respect of sustainability research but also serve to generate joint political positions on academic research.

Lower Saxony profits from an excellent science infrastructure in the field of environment and sustainability research. The University cooperates closely, for example, in energy research with the Universities of Clausthal, Hannover and Braunschweig and with the University of Lüneburg in sustainable change processes.



## THE NORTHWEST SUSTAINABILITY STRATEGY

The challenges of sustainable development with a special focus on marine and coastal research and renewable energies are also high on the agenda of Oldenburg's *neighbouring universities* in Bremen (University of Bremen and Jacobs University) and Groningen in The Netherlands.



Oldenburg cooperates closely with these three universities in the fields of marine and coastal research and energy research. Common research specialisation has paved the way for joint degree courses (e.g. Masters in Water and Coastal Management).

A research consortium with the University of Maryland dedicated to sustainable development and climate research has been established via the *artec Sustainability Research Centre of the University of Bremen*.

The central issues of the joint research programmes are focussed on the development of climate adaptation strategies for the coastal region and the key business clusters in the *Bremen-Oldenburg Northwest Metropolitan Region* and relate to logistics/port industry, maritime industry, energy, food processing and tourism.

The Metropolitan Region activities include not only research institutes but also the active involvement of commercial enterprises and local government representatives. Since 2006 the State of Bremen together with the Universities of Bremen and Oldenburg has sponsored the *Environmental Prize for the Northwest*.





## OBJECTIVE: CAMPUS SUSTAINABILITY

Sustainable development is a process that takes place on the campus. The **Sustainable University** goal acts as a leitmotiv.

In 2002 a **Uni-Eco-Survey** was carried out by the NABU environmental protection NGO, the Grüner Punkt company and the students' magazine UNICUM: the student ratings acclaimed Oldenburg as the "leading ecological university".

The key focal points of sustainable campus management are the following:

### **Energy management**

The reduction of the university's energy consumption has a dual economic and ecological priority. In addition to a series of technical innovations in 2007 the University began to deploy its scientific assets in the field of communication to maximise on the behaviour-related potential for energy savings. These activities are channelled through the GEKKO project (p. 14).

### **Student Administration**

The student administration organisation has prioritized ecological products. A large segment of the food served in the campus cafeterias and restaurants is produced according to ecological principles in the home region. The university's ecological catering performance was confirmed by the European Eco-Audit Award in 2003.

The so-called **Oldenburg Ecology Centre** is situated in the middle of university campus. The complex was set up by the student administration organisation and includes shops with a range of 100% ecological products: food, textiles and stationary.



Photos: Christian Säuberlich, Karre, akjleb, ig3l, bijoux, woodstock1, andybahn, frau.lueders, bommeloni, zorcan, archfreak



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KÖLN

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