Options for Socio-Economic development in the trilateral Wadden Area

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The Wadden Sea is the world's largest coherent intertidal flats with a unique ecosystem characterized by a rich benthic fauna supporting millions of coastal birds

Ecological' values

UNESCO-Worldheritage site since 2009

Trilateral Waddensea area

Wadden Sea Region: 25 inhabited islands

- The area counts 25 inhabited islands and several smaller vegetated islands and barren high sands.
- The total area of the islands is about 2,000 km² and the Wadden Sea itself covers about 8,000 km².
- The mainland is one of the oldest and most complex cultural landscapes in Europe and has been inhabited for more than 5,000 years.
- At present, 1 million inhabitants live on islands and administrative regions directly bordering the Wadden Sea. An estimated 3.5 million inhabitants live in the 17,500 km² of land with severe flooding risks, i.e. at less than 5 m above or even below mean sea-level in this region.
Nature Conservation and Human Interaction in the Wadden area since many centuries

- Towards safety and protection of flooding: building dikes
- From reclaiming land to nature protection
- From nature protection to shared use
- From national to trilateral management
- The Wadden system needs to be managed so that both the ecosystem and the social system can develop in a sustainable way. This in itself is a real challenge. Proper management can only be applied if there is sufficient ecological and social background information and knowledge to manage this integral system

 establishment Waddenacademie

Wadden Academie tasks:

- to identify gaps in cross-domain knowledge in order to assist in the sustainable development of the Wadden Sea Region;
- to promote a coherent research programme at regional, national land international level and;
- to promote information supply and knowledge exchange within and between research institutes, government, industry and social organisations.

System Matrix

Goals of Trilateral Integrated Coastal Zone Management (ICZM) by Wadden Sea Forum

- 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.
- Almost full employment for which a wide diversity of jobs is needed.
- With regard to welfare WSR residents should have an adequate income, good living conditions and high life expectancy. Social equality and work-life balance should ensure satisfaction among the population.
- This requires balanced economic development that provides future prospects for people living and working but should also generate surpluses for environmental protection measures.
- The economy in the WSR should be made resilient for economic recessions and international competition by means of strategies for innovation and entrepreneurship.

Resilience of regions

- Social resilience
- Environmental resilience
- Economic resilience
- Bearable
- Sustainable
- Viable
- Equitable
Population density
Rural - urban
typology: no real rural areas in
The Netherlands!
Country sites transforms from
production space (agriculture) to
consumption space (residential and
leisure)
Source: EU-Commission (November
2010), Investing in Europe’s
future, 5-th Report on Economic,
Social and Territorial Cohesion

New (coal fired) power plants in
Eemshaven and in Germany: cooling
water, dredging, jobs?

Extraction of natural gas on sea and land
Natural gas extraction causes
soil subsidence -> earthquakes
Earthquakes 1986-2014. Source: KNMI

Policy dilemma
• How to create jobs and income for the inhabitants of the
  Wadden area without damaging the unique ecological
  values of the ecosystem
• Investments funds available as compensation for as
  extraction, but only in the narrow coastal zone
• With this fund job creation in farther away more urban
  areas within commuting distance is not allowed
• What is the appropriate spatial scale for this problem?
• How big is the problem?
• What type of activities do lead to suitable jobs for the
  inhabitants and do not damage the eco-system?
Lack of data at a small spatial scale

- A major problem with the implementation of especially the economic aspects of the ICZM is the lack of up-to-date and comparable information at the trilateral level with regard to demographic change, (un)employment and the structure of the regional economy.
- The available information is fragmented and restricted to certain areas at the national or regional scale or specific economic sectors.
- The problem is often that definitions of e.g. economic sectors are not the same for small spatial areas in the three countries. Comparable information is often only available at the level of rather large spatial administrative regions, while information is needed at the detailed geographical scale of municipalities or parishes for effective ICZM, where the regional demarcation of the area is small enough to assume a strong relation between the ecosystem in the Wadden Sea and the demographic and socio-economic situation for the inhabitants in the coastal zone.

The World Heritage List is the most prestigious List of cultural and natural monuments worldwide.

2014 entire Wadden Sea on the World Heritage List with the extension of the Danish part.

An exceptional opportunity to reinforce conservation and management and advance sustainable regional development with the stakeholders.

The Wadden Sea Region covers an area, which encompasses the coastal zone, the Wadden Sea with its islands and sands and the relevant parts of the Exclusive Economic Zones (EEZ) of Denmark, Germany and the Netherlands.

Demarcation of the Wadden area (LAU-2 classification), 2013.

Waddenbarometer

OECD-project: How is life in your region? Case study North of the Netherlands (also for Southern Denmark).
Wellbeing outcomes North NL, Netherlands, OECD (OECD, 2014)

Households with Broadband Access: overall the Netherlands does very well!
But: in some villages in peripheral lagging municipalities hardly access!
→ Spatial scale of measuring is important!

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Broadband Access at a detailed spatial scale: in some villages in peripheral lagging municipalities hardly access!
See: Salemink and Dirk Strijker, 2014
(http://www.rug.nl/frw/news/2012/final_broadband.pdf) and Nieuwsuur-uitzending "Platteland digitaal achterlijk gehouden"

Composition of the HUMAN population in the tri bilateral Wadden area

Figure 6. Rate of ageing in Dutch, German and Danish Wadden area, relative to the respective national rates of ageing.
Source: Statistics Netherlands, Statistics Denmark, national and regional German statistical agencies
Dissertation Rixt Bijker (January 2013): There are also many migrants to the less popular rural areas! Also important: quick connections to nearby city + fast ICT Broadband access.

Labour market indicators in the Wadden area

<table>
<thead>
<tr>
<th></th>
<th>Wadden area</th>
<th>Wadden islands</th>
<th>Netherlands</th>
</tr>
</thead>
<tbody>
<tr>
<td>% of jobs in 2011 in</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>agric. manuf tours m edu. health</td>
<td>2,0 4,0 6,0</td>
<td>2,0 4,0 6,0</td>
<td>2,0 4,0 6,0</td>
</tr>
<tr>
<td>Agriculture</td>
<td>34.1 0.4</td>
<td>73.5 4.0</td>
<td>5.6 14.7 3.6 7.3 18.9</td>
</tr>
<tr>
<td>Mining</td>
<td>1.0 0.7</td>
<td>5.5 3.5</td>
<td>1.3 2.1 11.0 8.8 17.1</td>
</tr>
<tr>
<td>Manufacturing</td>
<td>98.9 0.0</td>
<td>73.5 4.0</td>
<td>5.6 14.7 3.6 7.3 18.9</td>
</tr>
<tr>
<td>Utilities prod/distrib</td>
<td>200.0 0.0</td>
<td>71.6 4.5</td>
<td>2.7 8.7 3.2 8.4 19.6</td>
</tr>
</tbody>
</table>

Figure 8. Net migration by age group in the Dutch Wadden area, 2003 and 2013

Source: Statistics Netherlands

Figure 9. Rate of population of working age (15-64) in all three Wadden areas relative to national rates

Source: Statistics Netherlands, Statistics Denmark, national and regional German statistical agencies

Figure 10. Employment structure of jobs Wadden area relative to national structure, 2011

Source: Statistics Netherlands
Socio Economic challenges Wadden Region

- Demography: population decline, aging, spatial sorting
- Regional economy and labour market: jobs, unemployment, income, education → well-being (OECD)
- Interaction Economy ↔ Ecology, especially in sectors like fishery, agriculture, energy, tourism, harbour and related shipping and manufacturing activities
- Needed: value change approach and regional innovation and investment strategy; Social Impact Analysis
- Trilaterale coastal zone management; science policy matrix
- Ecosystem Services: economic valuation; Hotspot monitor, Big Data
- Economic spin-offs of the UNESCO World Heritage status

Science-Policy Matrix

<table>
<thead>
<tr>
<th>Size of the box: degree of concern to management</th>
<th>Colour of the box: Adequacy of Information</th>
</tr>
</thead>
<tbody>
<tr>
<td>HIGH</td>
<td>Good</td>
</tr>
<tr>
<td>Moderate</td>
<td>Moderate</td>
</tr>
<tr>
<td>Low</td>
<td>Poor</td>
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Options for economic development and jobs

- Economic activities with locational advantages in the Wadden area: (i) agriculture and fishing, (ii) extraction of energy (oil, gas, wind), (iii) harbours and (iv) tourism and related personal and business services
- Innovations: production of salt-tolerant potatoes and other crops that will grow in a salt environment
- Promote more localized value chain for shrimp fishing: innovative mechanical shrimp peeling machines instead of peeling in Maroc (3,000 km away) because of cheap labour → higher prices for better product with less catch
- Attraction of footloose economic activities and people with zero effect on the ecosystem: designers, journalists, scientists, writers, artist can do their business everywhere but like the quiet and healthy environment of the Wadden region. They live and do their business in redundant farms, churches and industrial buildings. Crucial: fast ICT-Broadband access

Highly attractive places for tourists in wadden municipalities in 2013

- Value locations in the Hotspotmonitor
Origin of the people who find the Wadden an attractive location: distance decay, but less in Germany.