

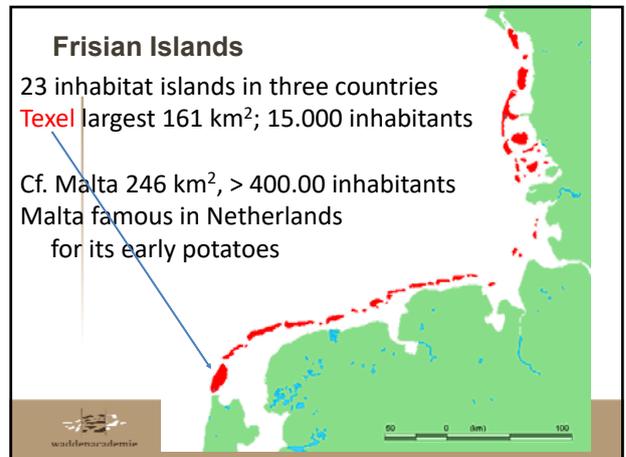
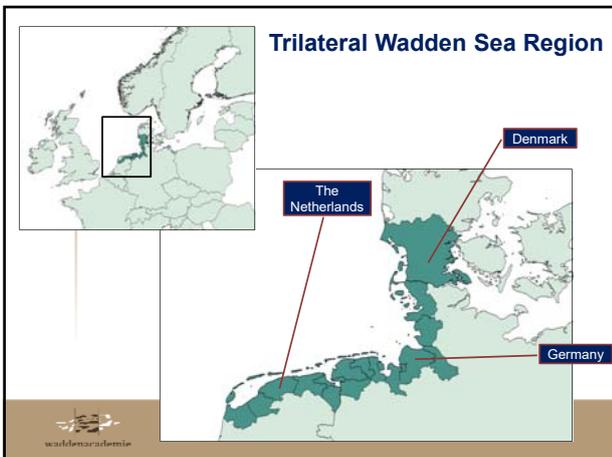
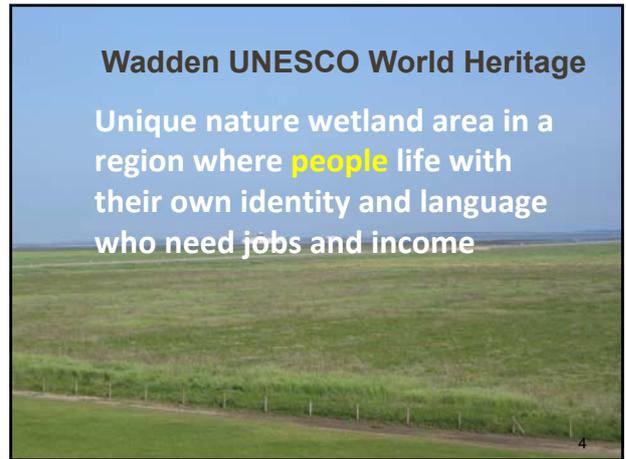
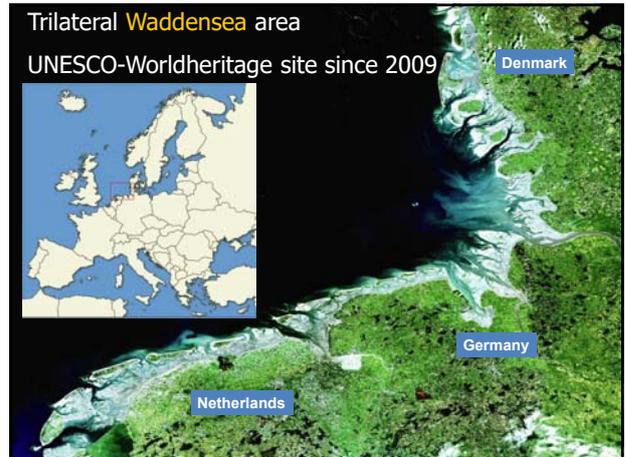
**Sustainable regional development and management in the trilateral Worldheritage Wadden Sea Region**

Guest lecture University of Malta, October 6, 2017

**Jouke van Dijk**  
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 waddenacademie

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## Wadden Sea Region: 25 inhabited islands

- The area counts 25 inhabited islands and several smaller vegetated islands and barren high sands in three countries.
- The total area of the islands is about 2.000 km<sup>2</sup> and the Wadden Sea itself covers about 8.000 km<sup>2</sup> over 500 km.
- **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 km<sup>2</sup> of land with severe flooding risks. i.e. at less than 5 m above or even below mean sea-level in this region.

The World Heritage List is the most prestigious List of cultural and natural monuments world wide

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

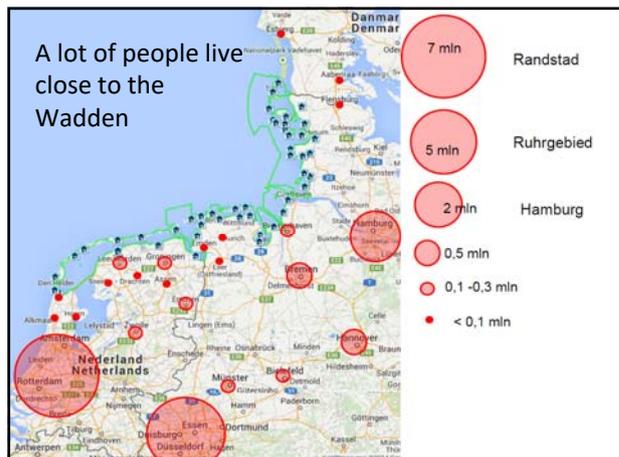
An exceptional opportunity to reinforce conservation and management and advance sustainable regional development with the stakeholders



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



A lot of people live close to the Wadden



## 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.
- → **Needed: knowledge and monitoring**

## 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

## Reason for and establishment of the Wadden Academy:

- Final report by the Wadden Sea Policy Advisory Group (Meijer Committee, 2004), 'Ruimte voor de Wadden' [Room for the Wadden Sea Region]:
- Observation that in 2004, policymaking and governance of the Wadden Sea had reached an impasse.
- Recommendations included: enlarge and reinforce the natural features of the Wadden Sea; overhaul policy and governance; keep shellfishing and gas extraction within natural boundaries; improve knowledge management of the Wadden Sea Region.
- Dutch government decided: to cease mechanical cockle fishing, controlled gas extraction, set up the Wadden Fund (800 million euros over 20 years) to support nature and the economy in the Wadden Region, and establish the Wadden Academy to support 'knowledge management' related to the Wadden Sea Region.



13

## Waddenacademie Established 2008 Network organization

### Boardmembers:

- Dr. Katja Philippart  
*Ecology*
- Dr. Hessel Speelman  
*Geology*
- Dr. Meindert Schroor  
*Cultural History*
- Prof.dr.ir. Pier Vellinga  
*Climate and Water*
- Prof.dr. Jouke van Dijk  
(chair) *Economics*

### Board



*Executive Secretary:*  
Klaas Deen



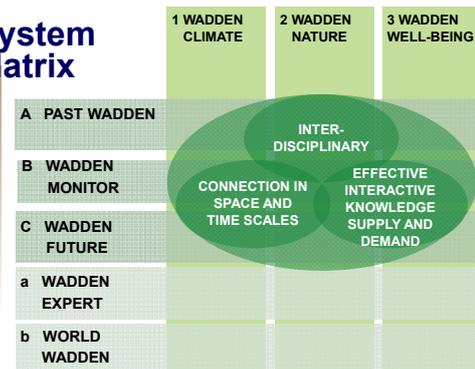
There is also a Young Wadden Academy since 2016!

## 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 and international level and;
- to promote information supply and knowledge exchange within and between research institutes, government, industry and social organisations.
- Monitoring:** encourage long term monitoring of ecological, economic and social cultural developments for policy, management and research



## System Matrix



## Schematic of Earth System - Human System Feedbacks

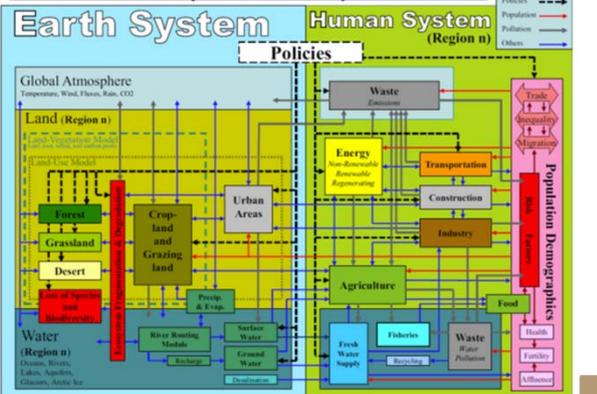


Figure 6. Schematic of a Human-Earth System with drivers and feedbacks.

## The integrated research agenda

'Knowledge for a sustainable future of the Wadden'

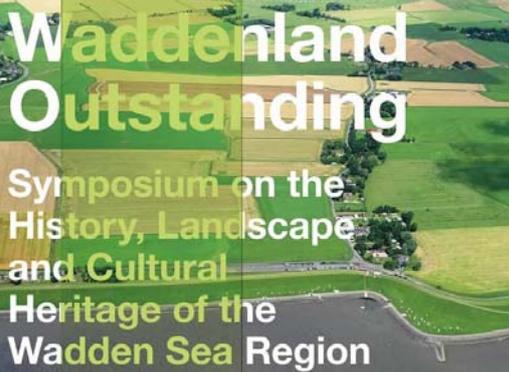
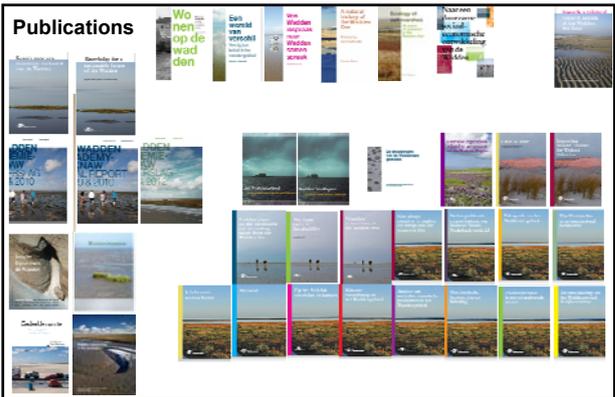
Research agenda for the Dutch Wadden Sea Region



## Next step Trilateral Research Agenda

- The necessity for a Trilateral Research Agenda (TRA) for the Wadden Sea Region originates from the declarations from the Trilateral Government meetings 2010 and 2014, stating that:
- Sylt-declaration 2010, pkt. 41: "Support the establishment of a trilateral research platform directly connected with existing national networks. The platform will elaborate a trilateral agenda for policy-relevant research in consultation with the Board..."
- Tønder-declaration 2014 pkt. 63: "Encourage discussions by the scientific community and policy makers on the major policy issues and related knowledge as a basis for further developing a trilateral research agenda and a trilateral research platform."

## Publications



Op 24 juni 2017 werd de beschrijving op 'Verwachtingen' door de Internationale Dark Sky Association (ISA) officieel aangewezen tot het eerste Dark Sky Park van Nederland. Het Dark Sky Park is een gebied waar het donker is, waar de donkere hemel een belangrijke rol speelt in het leven van de bewoners. Het Dark Sky Park is een gebied waar het donker is, waar de donkere hemel een belangrijke rol speelt in het leven van de bewoners.

Waddenacademie  
Night Light

19e symposium Waddenacademie  
19 & 20 oktober 2017

### Feel the Night

Over het belang van stilte en duisternis in het waddengebied

www.waddenacademie.nl

PROGRAMMA

When? → 19 & 20 September 2017

## Resilience of regions



## 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
- Sea level rise; innovations with double dikes: production of salt-tolerant seed potatoes and other salt tolerant crops
- Promote more localized value chain for shrimp fishing: innovative mechanical shrimp peeling machines instead of peeling in Maroc (3.000km 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



25

## Working on robust resilience



## Important policy issues and dilemmas

- Gas and salt extraction: subsidence; earthquakes
- Climate change and sea level rise; salination, flooding
- Flyway: Waddensea is important for migratory birds from nordic / arctic to Africa with stopover on the Wadden
- Swimway: dikes etc. prevent that fish can move from fresh to salt water; fish migration river
- (Shrimp) fisheries: soil ploughing, by-catch
- Harbour activities; power plants, chemical industries, Meyer Werft shipyard for big cruise liners; dredging
- Windpower: horizon pollution; ship wrecking
- Tourism: limits for the islands, opportunity for the coast



Waddenacademie | Leeuwarden 11-10-2017 27

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



## Extraction of natural gas on sea and land

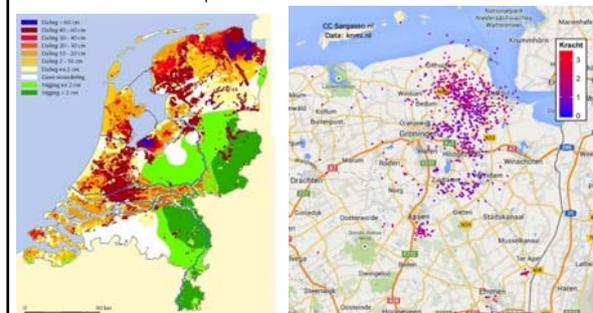


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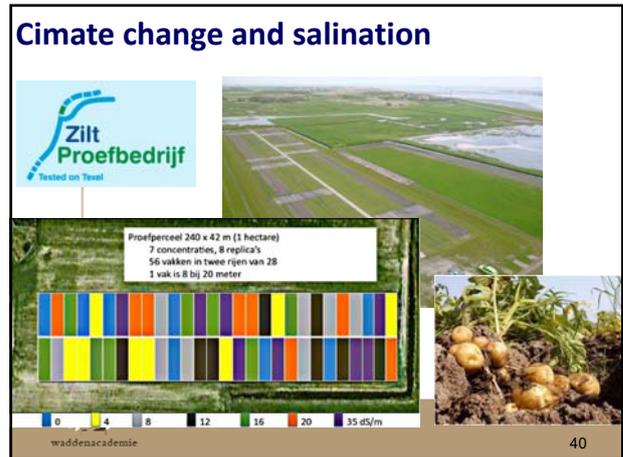
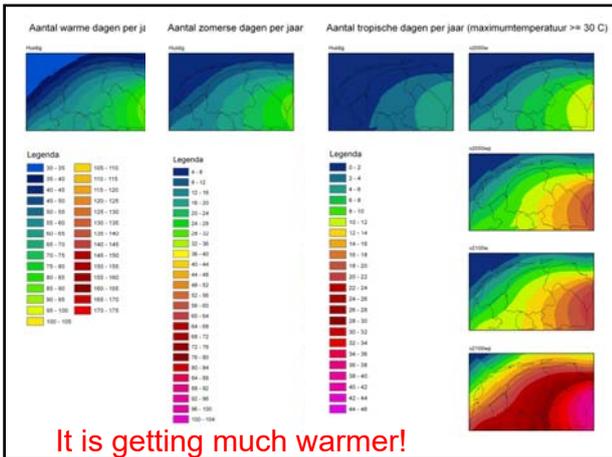
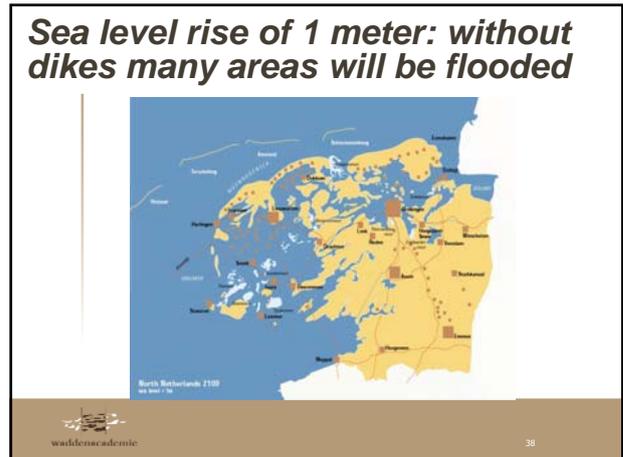


Natural gas extraction causes soil subsidence → earthquakes

Earthquakes 1986-2014. Source: KNMI







**Best options according to the Waddenacademie:**

Area related economic activities that fit with the skill of the people and the characteristics of the area:

- Tourism, especially on the coastal land side
- Food: agriculture (in a salt environment)
- Explore the options for sustainable Harbours and Fishery

Footlose economic activities:

- Business and personal services

(Attractive Residential area in combination with accessibility, ICT, self-driving cars etc.)

waddenacademie 41

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