

Trilateral Research Agenda Wadden

for the Wadden Sea Region and its World Heritage Site

Next steps!


Prof.dr. Jouke van Dijk, Director Waddenacademie

Presentation for TASK GROUP MANAGEMENT AND MONITORING,
Wasserstraßen- und Schifffahrtsamt, Bremen, Germany, December 22, 2017



Background Trilateral Research Agenda

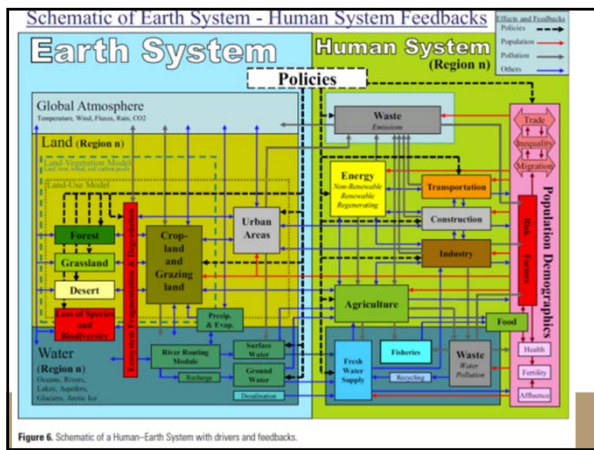
- The necessity for a Trilateral Research Agenda (TRA) for the Wadden Sea Region originates from the declarations from the Trilateral Government meetings 2010 and 2014, stating that:
- Sylt-declaration 2010, pkt. 41: "Support the establishment of a trilateral research platform directly connected with 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**."



Priorities of the Dutch presidency of the Trilateral Wadden Sea Cooperation June 2015:

7. Scientific agenda for the Wadden Sea World Heritage Site: The Wadden Sea has long been a site of much and diverse scientific research. For good management of the World Heritage Site there are plenty of questions that will require common and better coordinated research.

Objective: A coherent scientific agenda, relevant to the World Heritage Site which supports decision-making on current and future issues, captures the interest of young scientists and promotes scientific cooperation between institutions.

Trilateral 'supertrio' installed by the Wadden Sea Board:

Mette Guldborg (Denmark)
/ replaced by Jesper Bartholdy

Karsten Reise (Germany)

Jouke van Dijk (Netherlands, chair)

Support and coordination by CWSS (Folkert de Jong) and Waddenacademie (Klaas Deen) and in the writing stage by Josef Stuefer (NWO)



Summer 2015: Installation five subgroups

- Geosciences**
DK Jesper Bartholdy, Chair
DE Alexander Bartholomä
NL Hessel Speelman
- Ecology**
DK Karsten Laursen
DE Christian Buschbaum
NL Katja Phillippart, Chair
- Economy and Society**
DK Torben Dall-Schmidt, Chair
DE Ingo Mose
NL Jouke van Dijk
- Cultural Heritage**
DK Mette Guldborg
DE Beate Ratter, Chair
NL Meindert Schroor
- Climate and Water**
DK Aart Kroon
DE Horst Sterr
NL Pier Vellinga, Chair




Summer 2015 – Summer 2016: Working process subgroups

The subgroups write an overall outline of 3-4 pages of themes and issues within their field. The outline serves as a starting point for a broad discussion among scholars in the same field at a workshop. The subgroups finish their report concluding with suggestions for 5-10 important research questions within its field.

The report contains an outline of

- **Major achievements and persisting gaps of knowledge (5-10 most important research questions)**
- **Main questions relevant for policy (science policy matrix)**
- **Suggestions for transdisciplinary themes**

I reported in Bremen to TG-MM on Sept. 28, 2016



7

Draft Trilateral Research Agenda is discussed extensively in May, 2017


at the 14th International Scientific Wadden Sea Symposium, ECCO Conference Center, Tønder (Denmark), May, 2017



→ Comments are addressed resulting in a very substantially revised version discussed at the WSB, November 17, Vester Vested, Denmark!




8



Content

| | | |
|-----|--|----|
| 1. | Introduction | 3 |
| 2. | Brief history of the Trilateral Research Agenda | 6 |
| 3. | Challenges and opportunities | 8 |
| 3.1 | The Wadden Sea Region as living lab for human-nature interactions | 9 |
| 3.2 | The Wadden Sea Region coping with climate change and relative sea level rise | 10 |
| 3.3 | The Wadden Sea Region towards a sustainable maritime region | 12 |
| 4. | Thematic lines | 14 |
| 4.1 | Climate, water, sediments and subsurface | 14 |
| 4.2 | Ecology, biodiversity and spatial processes | 16 |
| 4.3 | Cultural heritage, identity and historical embedding | 18 |
| 4.4 | Economy, society and sustainable development | 20 |
| 5. | Mapping and Monitoring | 24 |
| 5.1 | TMAP | 24 |
| 5.2 | Future mapping and monitoring needs | 25 |
| 5.3 | Innovation in mapping and monitoring | 26 |
| 6. | Funding outreach, communication and education | 28 |
| 6.1 | Funding and organization | 28 |
| 6.2 | Outreach, communication and education | 31 |



Waddenacademie | Leeuwarden 24-3-2018 10

Trilateral Research Agenda

In this document the scientific community of the three Wadden Sea countries proposes a coherent trilateral research agenda with the aim to maintain natural and cultural values, to find a sustainable course for natural, societal and economic development, and to advance the entire Wadden Sea Region as example for engaging future challenges.



Waddenacademie | Leeuwarden 24-3-2018 10

Research: 3 Challenges and Opportunities

3. Challenges and opportunities

- 3.1 The Wadden Sea Region as living lab for human-nature interactions
- 3.2 The Wadden Sea Region coping with climate change and relative sea level rise
- 3.3 The Wadden Sea Region towards a sustainable maritime region




Waddenacademie | Leeuwarden 24-3-2018 11

Research: 4 Thematic lines + research questions

4. Thematic lines

- 4.1 Climate, water, sediments and subsurface
- 4.2 Ecology, biodiversity and spatial processes
- 4.3 Cultural heritage, identity and historical embedding
- 4.4 Economy, society and sustainable development

Some (unprioritized) research questions are formulated below. These reflect urgent knowledge gaps that are most relevant for the appropriate management of the Wadden Sea Region for this thematic line:



Waddenacademie | Leeuwarden 24-3-2018 12

Mapping and Monitoring

5. Mapping and Monitoring

- 5.1 TMAP Quality Status Report, Trilateral Waddenbarometer
- 5.2 Future mapping and monitoring needs
- 5.3 Innovation in mapping and monitoring Satellite imaging, drones, big data, DNA-techniques, Citizen Science

Waddening Academie | Leeuwarden 24-3-2018 13

Funding, Outreach, Communication, Education

6. Funding, outreach, communication and education

- 6.1 Funding and organization
- 6.2 Outreach, communication and education Role of new Wadden Sea Partnership Center

Crucial issue for implementation:

- What are the most important questions?
- Science Policy Prioritization
- Funding and Organization
- Ministerial Council Declaration Leeuwarden, May 2018

Waddening Academie | Leeuwarden 24-3-2018 14

13th Trilateral Governmental Conference on the Protection of the Wadden Sea

Leeuwarden, Netherlands, 18 May 2018

Draft November 28, 2017

Trilateral Wadden Sea Governmental Council Meeting

Ministerial Council Declaration

(Draft as of November 28, 2017)
Note: general reservation on overall draft by Germany/Denmark/Netherlands

Waddening Academie | Leeuwarden 24-3-2018 15

Underlining the vital contribution of science and research to the further development of the protection and management of the Wadden Sea as an ecological entity and welcoming the efforts of the scientific community towards developing a Trilateral Research Agenda;

COOPERATION

The Ministers

- 66. **Encourage** discussions by the scientific community and policy-makers on the major policy issues and related knowledge as a basis for the further development of a Trilateral Research Agenda and a trilateral research platform;
- 67. **Instruct** the Wadden Sea Board to continue to strengthen its cooperation with the scientific community regarding issues relevant to the Wadden Sea World Heritage, taking into account the Trilateral Research Agenda and promoting pilot studies on nature restoration;

A bit disappointing? Can we do more?
Some ideas for prioritization, funding and organization

Waddening Academie | Leeuwarden 24-3-2018 16

| Impact indicators | Drivers | | | | Pressures | | | | RESPONSE | | | | |
|--|---------|-----------------------------|--------------|--------|--------------------|--------------------|----------------|------------------------|----------|-------------|----------------|----------|-----------|
| | Trends | Coastal Pressure Indicators | Agribusiness | Energy | Energy Consumption | Ports and Shipping | Climate Change | Invasive Alien Species | Human | Nature Loss | Climate Change | RESEARCH | EDUCATION |
| ENVIRONMENT | | | | | | | | | | | | | |
| Subsurface use and pollutants | | | | | | | | | | | | | |
| Longer term geomorphology | | | | | | | | | | | | | |
| Shofter tides morphology/morphology | | | | | | | | | | | | | |
| ECOSYSTEM | | | | | | | | | | | | | |
| Biodiversity - Reefbuilding Zoobenthos | | | | | | | | | | | | | |
| Biodiversity - Chironomid Fish | | | | | | | | | | | | | |
| Biodiversity - Breeding Birds | | | | | | | | | | | | | |
| Habitats - Subtidal Sandbanks | | | | | | | | | | | | | |
| Habitats - Salt Marshes | | | | | | | | | | | | | |
| Habitats - Beaches & Dunes | | | | | | | | | | | | | |
| Functions - Primary Productivity | | | | | | | | | | | | | |
| Functions - Secondary North Sea Fish | | | | | | | | | | | | | |
| Functions - Foraging Station Migratory Birds | | | | | | | | | | | | | |
| CULTURAL HERITAGE | | | | | | | | | | | | | |
| Accession/valuation | | | | | | | | | | | | | |
| Education | | | | | | | | | | | | | |
| Public access | | | | | | | | | | | | | |
| SOCIETY | | | | | | | | | | | | | |
| Employment | | | | | | | | | | | | | |
| Income | | | | | | | | | | | | | |
| Population | | | | | | | | | | | | | |
| Quality of life | | | | | | | | | | | | | |
| Health | | | | | | | | | | | | | |
| CLIMATE | | | | | | | | | | | | | |
| Longer term coastal rise | | | | | | | | | | | | | |
| Fresh water availability | | | | | | | | | | | | | |
| Weather extremes | | | | | | | | | | | | | |

Science – policy matrix

| | | | |
|--|----------|--|--|
| Size of the box: Degree of concern to management: which policy problems have the highest priority? | High | Management has a high level of concern for the value due to its current degraded condition and/or the high level of single or cumulative pressures affecting it. | |
| | Moderate | Management has a moderate level of concern for the value due to its current condition and/or the moderate level of single or cumulative pressures affecting it. | |
| | Low | Management has a low level of concern for the value due to its current good condition and/or the low level of single or cumulative pressures affecting it. | |
| Colour of the box: Adequacy of information: do we have the knowledge to solve the problem? | Good | The good level of information available directly supports management decisions and is currently sufficient to allow progress on the particular issue/interaction. However, further information to support ongoing adaptive management may still be required. | |
| | Moderate | The moderate level of information gives a reasonable basis for management decisions, but decisions regarding some aspects of the issue/interaction may be hampered by current knowledge gaps. | |
| | Low | The low amount or adequacy of information is a hindrance to management. Decisions are pending the availability of improved scientific understanding of the issue/interaction. | |

Waddening Academie | Leeuwarden 24-3-2018 17

Funding Trilateral Research Agenda Monitoring

- **Frontier Academic Research** funded by research councils (NWO, DMBF) and/or research ministries carried out by universities / academic research institutes
- **Applied Research, Mapping and Monitoring** activities with the main aim applying relevant existing knowledge and gathering long term data series needed for policy obligations and evaluations more likely to be funded by national authorities responsible for environmental issues including reporting obligations stemming from national legislation, European treaties and directives.
- **Regional Studies, Dissemination and Local Implementation** typically funded by regional authorities, regional businesses, NGO's, park authorities, etc.



Each type 1/3? NL 30%, DE 60% DK 10%?
Indicative budget of 50-60 million euro?

19

TRA: Prioritization and Organization

TRA is a General Framework consisting of:

- Three Challenges and Opportunities
- Four Thematic Lines + research questions
- Mapping and Monitoring
- **TRA can serve as a Framework for a Program with Call for Proposals for transdisciplinary trilateral projects written by researchers from various disciplines and research institutes and funded by research ministries and/or their respective funding agencies**

→ Evaluation by a trilateral programming board consisting of scientists and policy makers



20

Partnership Hub as trilateral platform

The functions of the Partnership Hub in this regard could:

- serve as the new physical home in Wilhelmshaven for the programming board of the TRA and as a meeting place for facilitating scientific cooperation between institutions and interaction between researchers and policy makers via workshops, etc.
- facilitate to capture the interest of young scientists to facilitate initiatives for e.g. the organization of multi-disciplinary workshops and Summer schools for master, PhD-students and post-docs.
- be a platform for the coordination and dissemination of and easy access to the broad variety of monitoring data, the dissemination of research outcomes and stimulate the exchange of staff and students of institutes of education.



Waddenacademie | Leeuwarden 24-3-2018

21

TRA: Timeline and implementation

NEXT Steps:

- Trilateral discussion about the implementation of the Trilateral Research Agenda in terms of organization and funding and the link with the Partnership Hub as Trilateral Platform for interaction, collaboration, information exchange and coordination of data management and access
- Crucial issues are the implementation of joint science – policy priorities and commitments for funding
- Formulating this for the Ministerial Council Declaration Leeuwarden, May 2018
- Installation of a programming board to prepare Trilateral Call for Proposals by the end of 2018 or 2019?



22

Priorities of the Dutch presidency of the Trilateral Wadden Sea Cooperation:

Objective:

1. A coherent scientific agenda, relevant to the World Heritage Site which supports decision-making on current and future issues
2. Captures the interest of young scientists
3. Promotes scientific cooperation between institutions, scientist and policy (platform)



23

Trilateral Research Agenda Wadden for the Wadden Sea Regio and its World Heritage Site

Next steps!

Prof.dr. Jouke van Dijk, Director Waddenacademie

Presentation for TASK GROUP MANAGEMENT AND MONITORING,

Wasserstraßen- und Schifffahrtsamt, Bremen, Germany, December 22, 2017

