



Cooperating on tackling the impacts of climate change

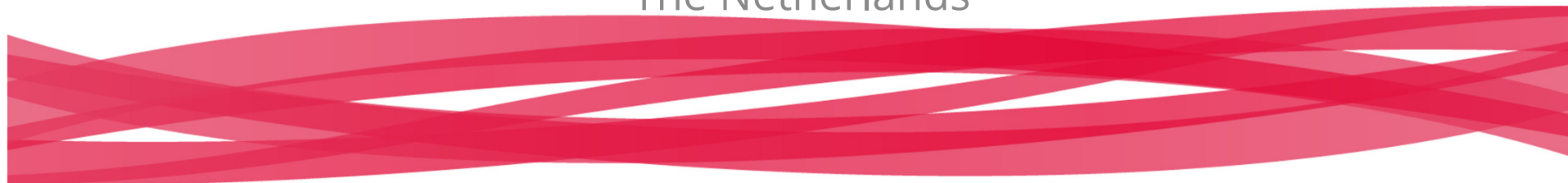




Key note 'Cooperating on tackling the impacts of



Dr. Roeland Allewijn
Director Rijkswaterstaat
The Netherlands



Agenda



15.00 Welcome and introduction

15.05 Key note: Cooperating on tackling the
impacts of climate
change

15.30 Project pitches

15.50 Break

16.00 Round table discussions per project

16.30 Wrap up

16.50 End of session

Climate Change

“..strengthen the global response to climate change by keeping a global temperature rise well below 2 °C..”

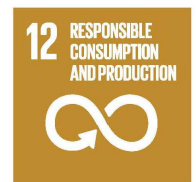
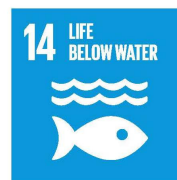
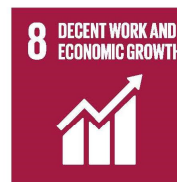
- Paris Agreement,
UNFCCC, 2015



Climate Change Internationally

".. a set of goals to end poverty, protect the planet, and ensure prosperity for all as part of a new sustainable development agenda.."

- Sustainable Development Goals,
UN, 2015



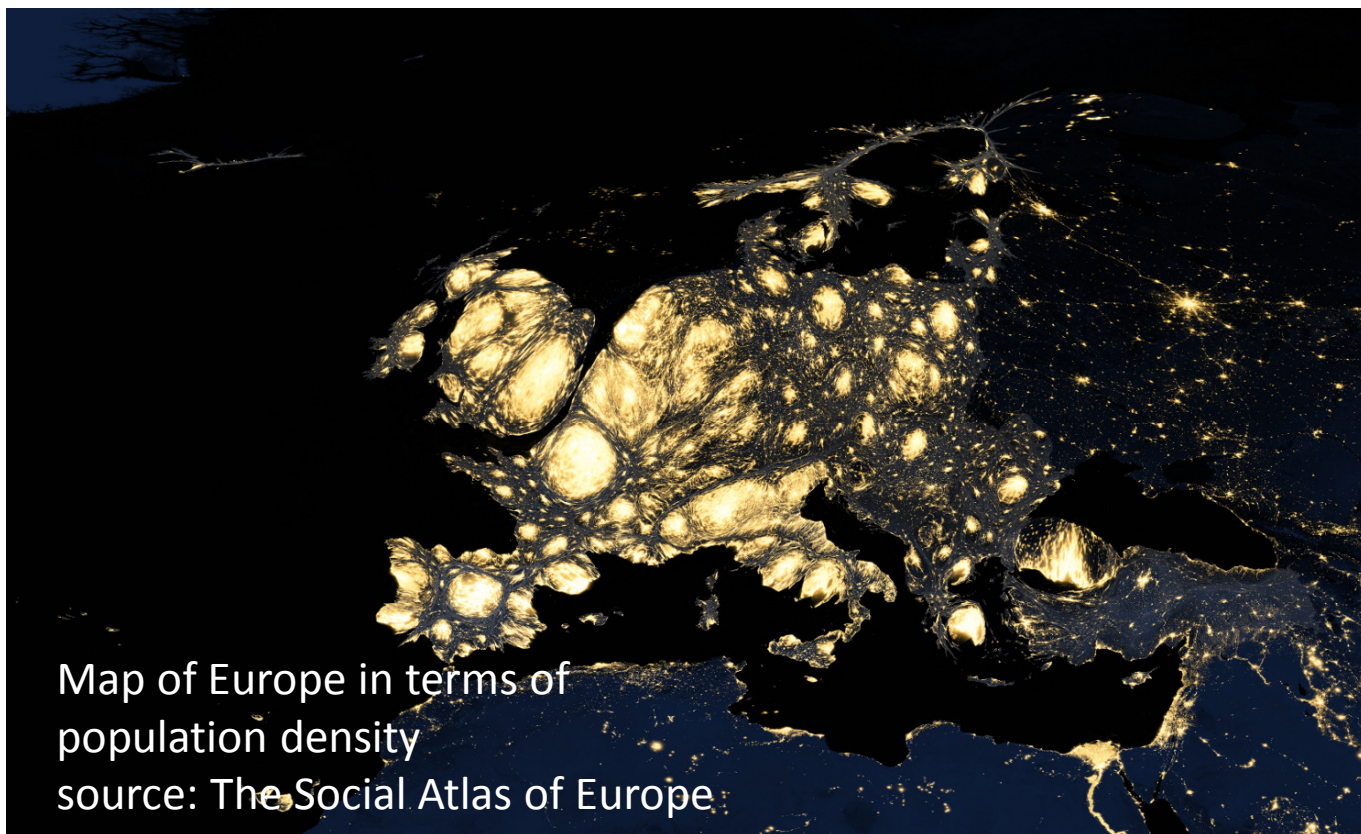
13 CLIMATE ACTION



A
\$6 billion
USD investment
in disaster risk
reduction over
the next **15**
years would
avoid losses
of **\$360**
billion USD



Impact of Climate Change





Theme 'Sustainable North Sea Region'

Climate change resiliency





Blue Green Infrastructure through Social Innovation

Subject:
Climate resilient cities





Subject:
Using the subsurface to
improve climate
resiliency





Subject:
Using the forces
present in our natural
systems to keep us safe
from flooding





Flood Resilient Areas by multi-layer Safety

Subject:
Reducing the impact of
flooding





Flood protection infrastructure Asset management and Investment

Subject:

Adaptive planning and
innovative design of flood
protection infrastructure,
stimulating multi-
functionality

Interreg



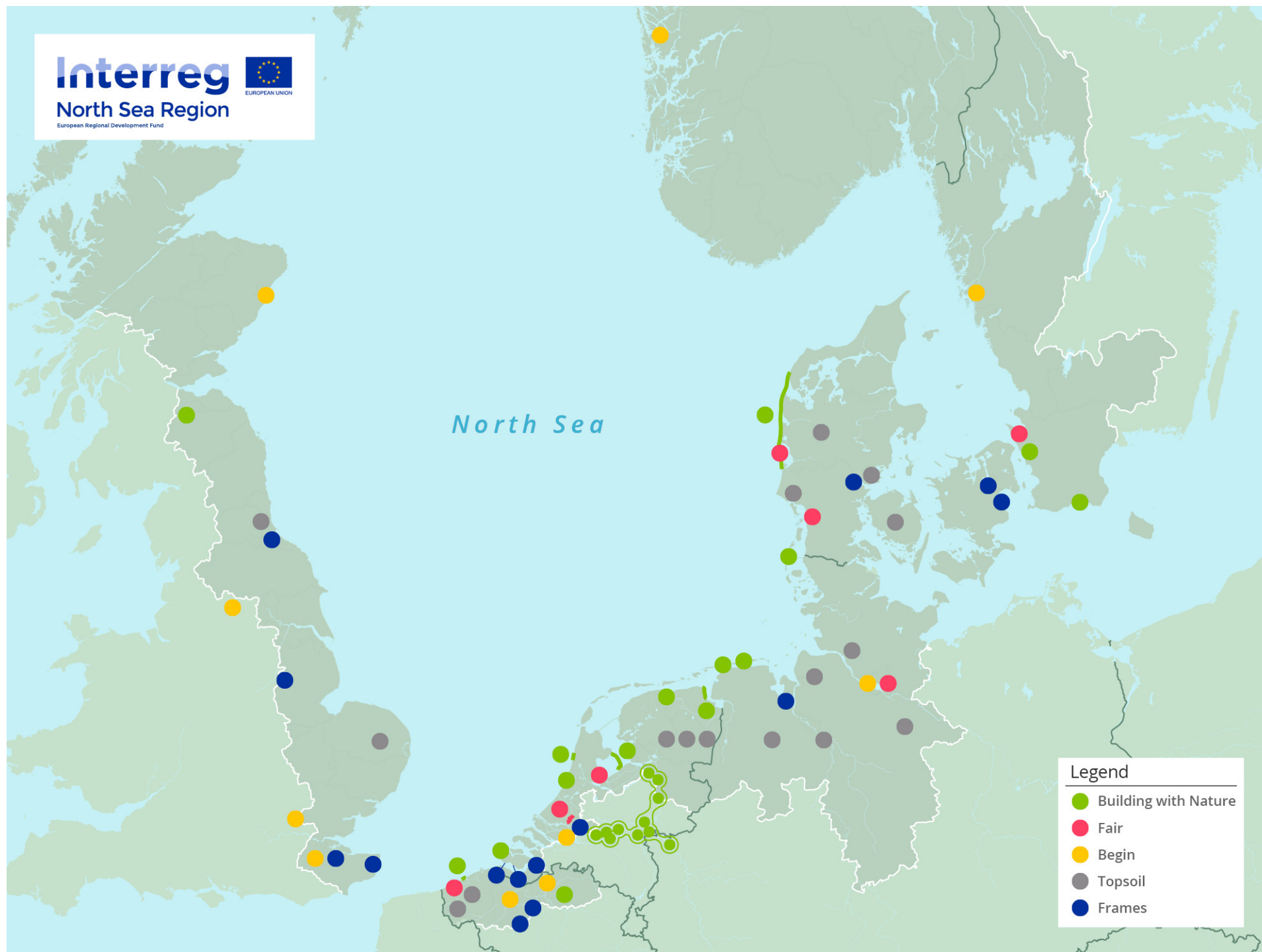
North Sea Region

European Regional Development Fund

North Sea

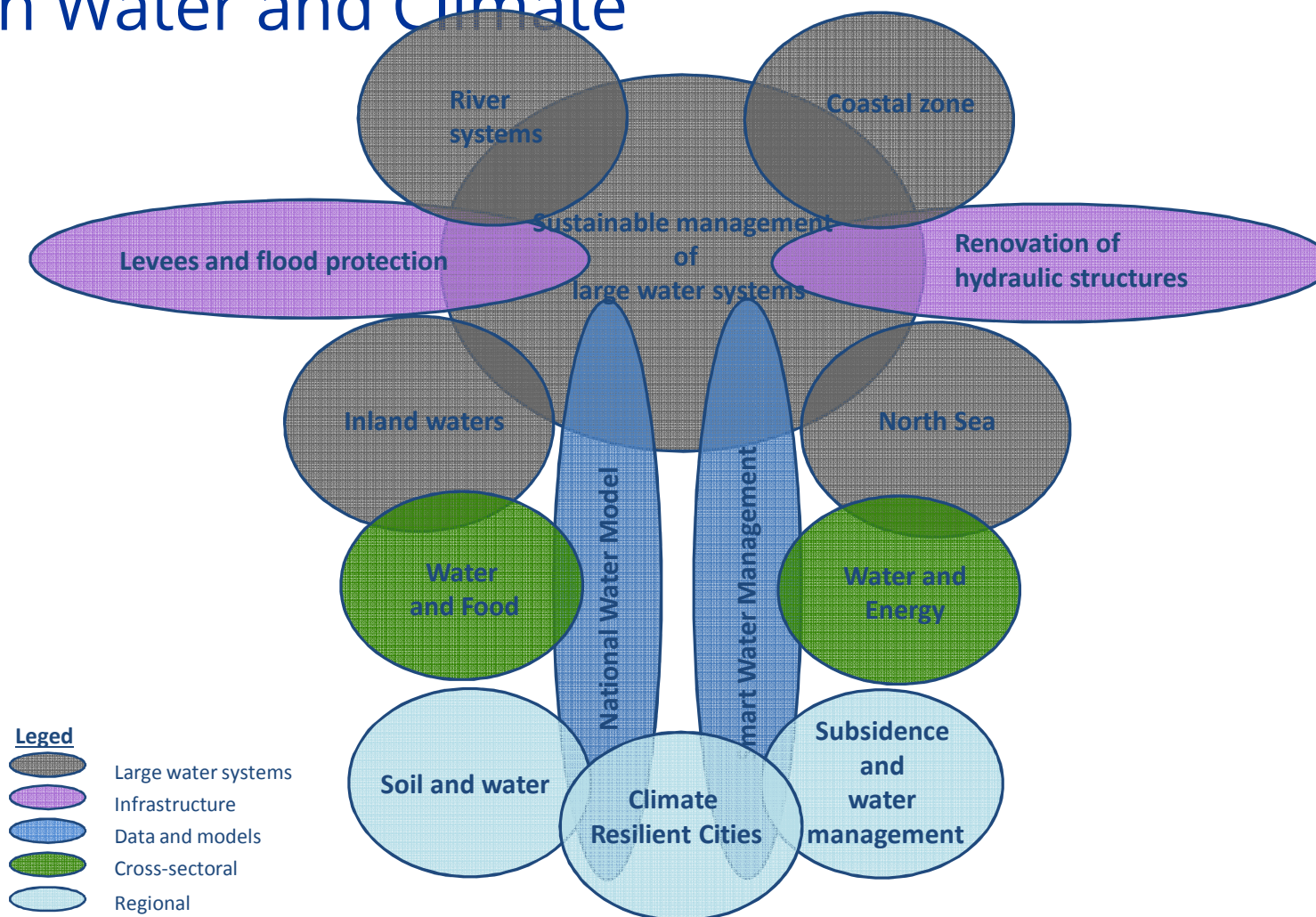
Legend

- Building with Nature
- Fair
- Begin
- Topsoil
- Frames





National research and innovation programme on Water and Climate



Dias nummer 14

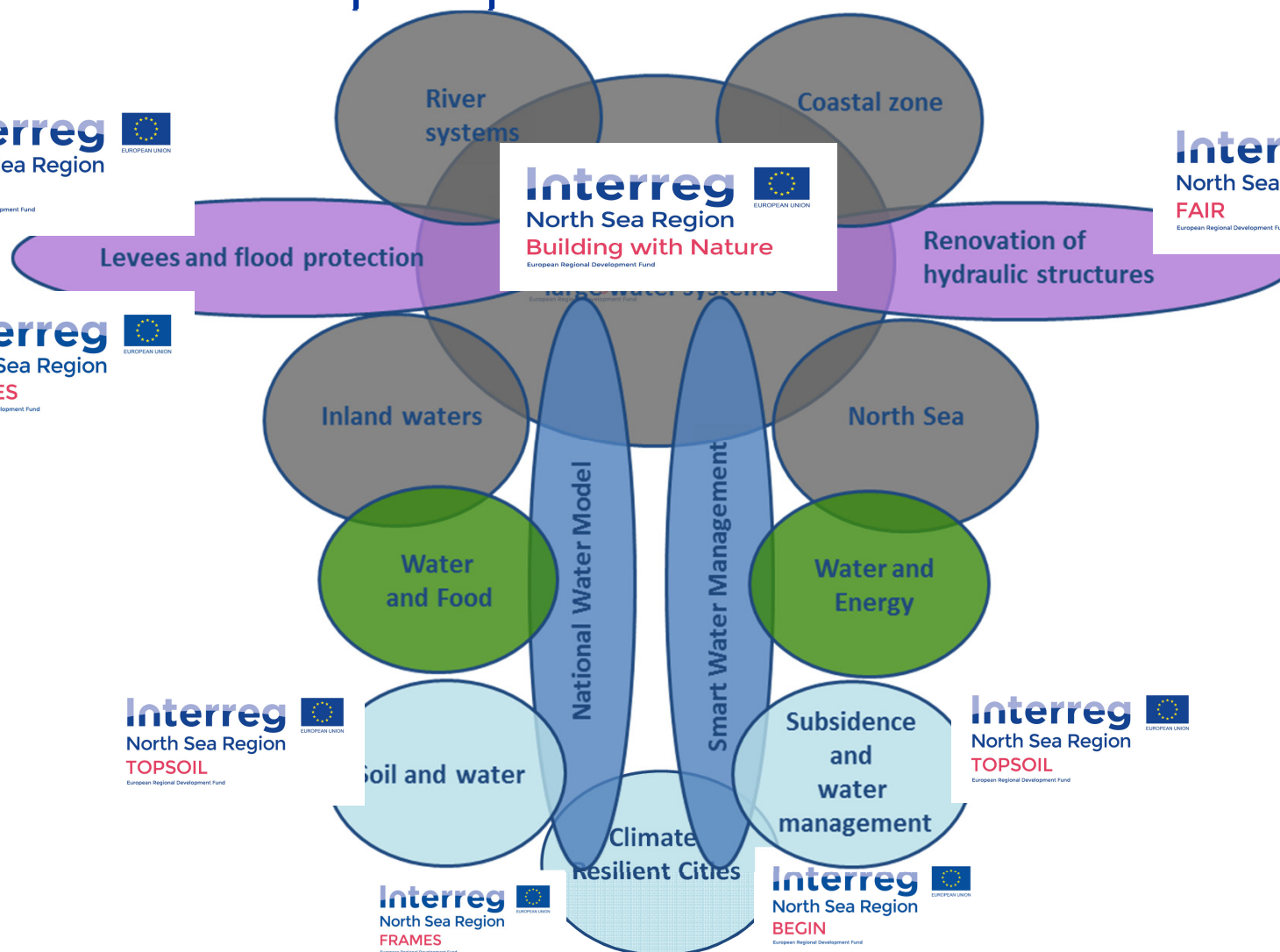
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Baldal, Egon (CIV); 09-06-2017



International perspective



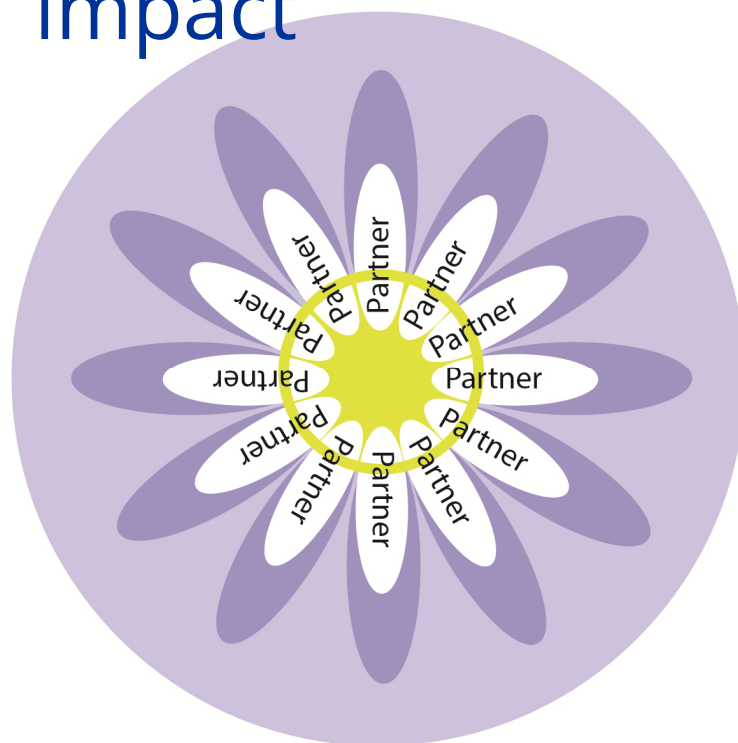
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Baldal, Egon (CIV); 09-06-2017

Interaction between projects enhances impact



Pathway to impact

Output

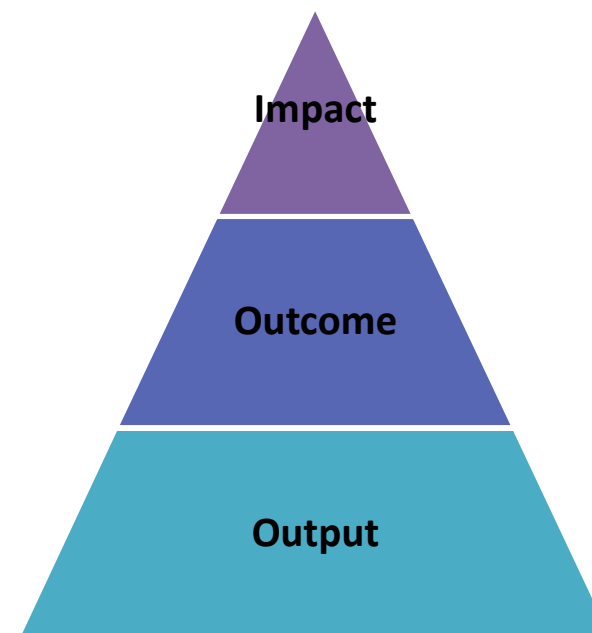
Outputs are the direct immediate term results associated with a project (often the deliverables of the project). Outputs are measurable and readily determined.

Outcome

Outcomes refer to the medium term consequences of a project. An outcome is a change that occurred because of the outputs.

Impact

Impacts are the long-term or indirect effects of the outcomes. Ideally, impacts aligns with the strategic objectives of an organization.





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North Sea Region

BEGIN

European Regional Development Fund



Expected **impact** of BEGIN



1. The impact will be to overcome the gridlock in climate change, due to economic circumstances.



Expected **outcome** of BEGIN



1. BEGIN will create a replicable approach for implementing blue-green infrastructure and maintaining eco-system services in cities.
2. BGI will be established as the dominant strategy for urban climate adaptation, based on validated business models with active citizens' contributions.



Expected **output** of BEGIN



1. Demonstration of BGI in 10 leading NSR cities (NL, B, D, S, N, Eng, Sco) with proven business cases that will guide capital investment of >€1Bn.
2. Collated toolbox that guides BGI implementation and helps involve citizens and business as investors.
3. Validation of a unique transnational city-2-city learning approach (from NSR CAMINO). It will be up-scaled via UN and Mayors Adapt city networks (>1600).





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FRAMES

European Regional Development Fund



Flood Resilient Areas by Multilayer Safety

Total budget € 6.924.911,
ERDF contribution € 3.462.455

01 October 2016 – 31 January 2020



General objective/impact: reduce the impact of floods from sea, river and extreme rainfall to keep the North Sea regions economically and environmentally sustainable.



Multilayer Safety Approach:

- Integrated flood risk management: combined actions for prevention, spatial adaptation, crisis response and recovery
- No one region or authority can do these actions alone → mobilise lokal and social stakeholders

Outcome - change

- Flood resilient areas: improved infrastructure and spatial planning measures
- Food resilient communities: better prepared communities and social stakeholders
- Flood resilient authorities: reduced recovery times and increased response capacity

Output - deliverables (selection from WP's)

Laymen reports, pilot studies, communication tools

Decision Support System

Adaptive pathways

Policy recommendations for authorities on governance of MLS

Toolkit for improved spatial targeting of catchment based flood risk management





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Building with Nature

European Regional Development Fund





Total budget € 6.800.040
ERDF contribution € 3.400.000

10 November 2015 – 30 June 2020



Building with Nature philosophy:

The power of nature can be used to help us achieve our goals. Knowing the system and being able to work with the forces present will yield an easier adaptable, better sustainable and multi-beneficial situation whilst reducing costs, optimizing benefits and involving stakeholders.



General objective/impact

Natural forces present in the system are widely used to prevent the North Sea Region and beyond from flooding. Adaptability and thus climate change resilience are herewith increased

Outcome – change

Practitioners and policy makers are aware of the Building with Nature approach and its multiple advantages and value and know how to use it as a worthy alternative to traditional techniques.





Output - deliverables

On the basis of our living laboratories, we provide a technical, economic and socio-political evidence base for the use of Building with Nature techniques in the prevention against flooding in coastal and catchment systems.

We disseminate the Building with Nature philosophy in the North Sea Region and beyond amongst policy makers and practitioners





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TOPSOIL

European Regional Development Fund



EUROPEAN UNION





PROJECT
AREA



Source: © EEA redesign: H2A Association

TOPSOIL will explore the possibilities of using the topsoil layers to solve current and future water challenges. It looks beneath the surface of the ground, predicts and finds solutions for climate related threats. The overall goal is to improve the climate resilience of the North Sea Region.

Total budget received from Interreg North Sea Region (2014-2020):

€ 3.67 million of ERDF

Total project budget:
€ 7.34 million

www.northsearegion.eu/topsoil

Background of the project

When considering the major risks resulting from climate change, people often watch the skies, expecting extreme rainfall events and storm surges to have an impact on their daily lives and working lives. However, the water under our feet is also known to be a major actor when it comes to the quality and quantity of our water resources.



Objectives of the project

The Topsoil Project will explore the possibilities of using the topsoil layers to solve current and future water challenges. It looks beneath the surface of the ground, predicts and finds solutions for climate related threats like flooding during wet periods and droughts during summer seasons. The overall objective of the Topsoil Project is the joint development of methods to describe and manage the uppermost 30 m of the subsurface, in order to improve the climate resilience of the North Sea Region. In addition, the project will demonstrate a practical implementation of solutions in 16 pilot projects.



To make sure the proposed objectives are met by the end of the project, five major working areas have been identified where international cooperation will be particularly beneficial:

1. Flooding in towns and agricultural areas due to the rising groundwater table caused by changed precipitation patterns.
2. Saltwater intrusion into freshwater reserves due to rising sea levels and changed irrigation, drainage and drinking water demands.
3. The need for a groundwater buffer to store water in periods of excess rainfall. The buffer of fresh water can be used for irrigation purposes during dry periods.
4. Better knowledge and management of soil conditions, which will provide better resilience to extreme rainfall events, improve water quality and improve crop yields.
5. The capacity to break down nutrients and other environmentally hazardous pollutants in the uppermost layers is yet unexplored. By improving our understanding, better land management can be implemented.





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FAIR

European Regional Development Fund

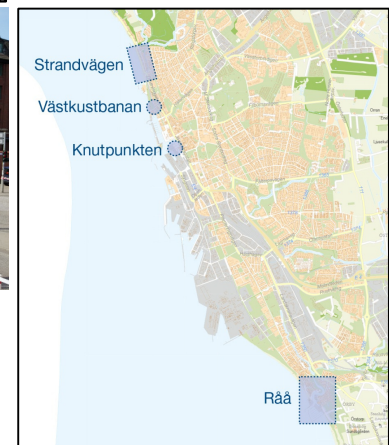


Total budget € 4.593.750
ERDF contribution € 2.296.875

Period:
10 November 2015 – 30 June 2022

Objective/Impact

Reduce flood risk across the NSR by improving investment planning approaches and climate change adaptation strategies



Despite the heterogeneity of the NSR, asset managers face common challenges:

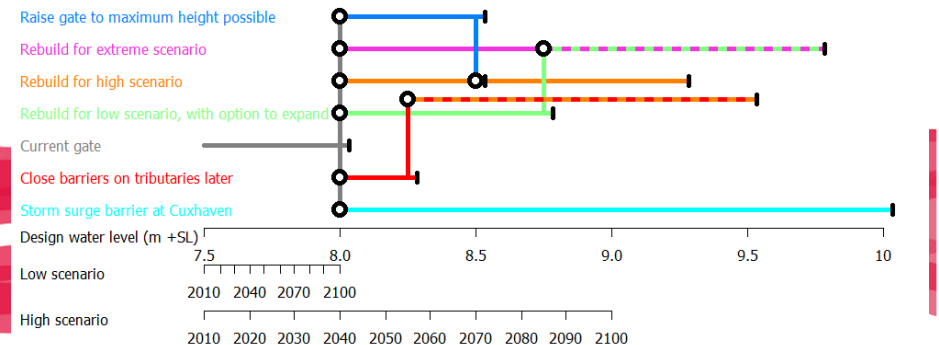
- + **Where to act:** Which asset would yield the greatest benefit (and reduce risk most)?
- + **When to act:** Is action required now, or can investment be postponed?
- + **How to act:** Should we collect more data or intervene? If we intervene what approach is best?

Outcome

- + **Do more for less** – through better targeting of investment
- + Encourage **multi functionality** – and discourage mono-functionality
- + Extend **asset life** – through smarter maintenance and renovation

Output - deliverables
In FAIR asset owners and science partners work together actively: Learn from each other, get a better understanding of the available tools and techniques and for the asset owner get access to the latest approaches and understand their applicability in their setting.

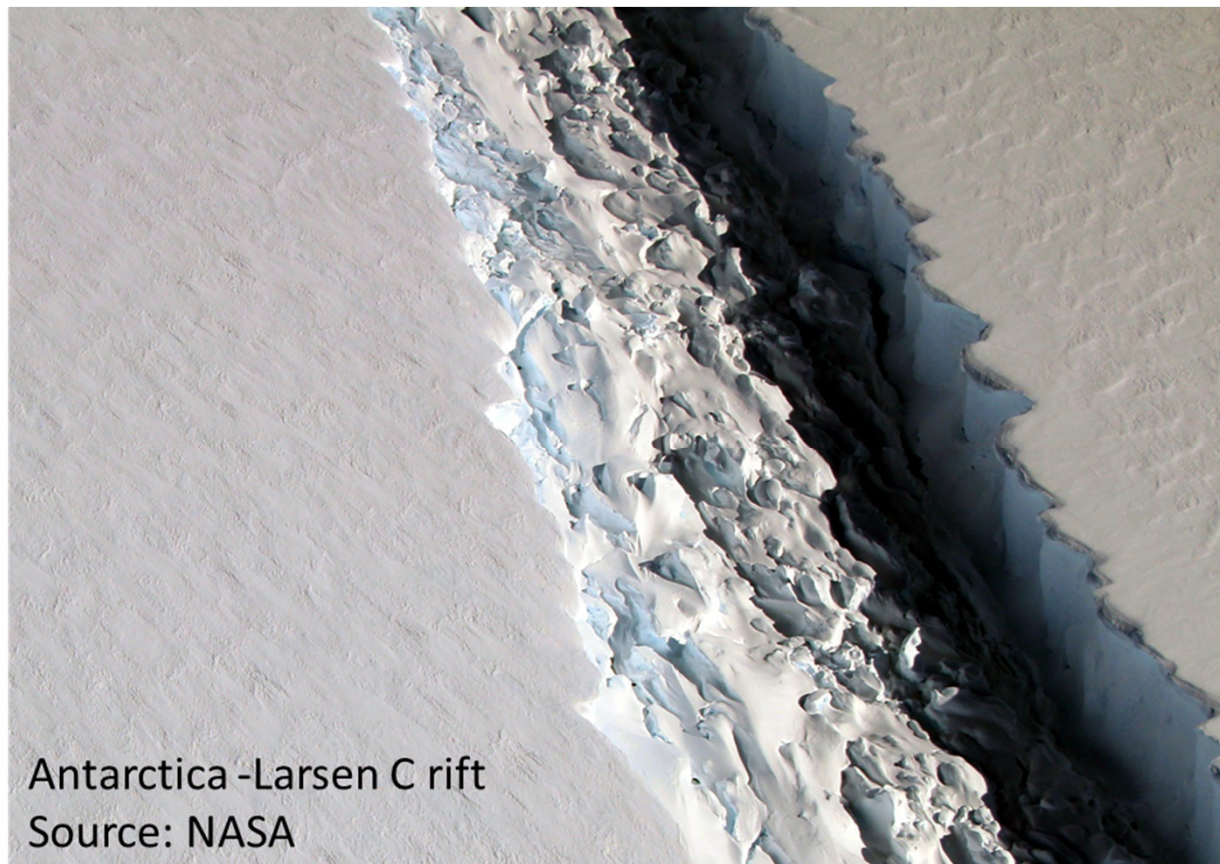
- + Guidance report on investment planning and assetmanagement
- + Guidance report on adaptive designing and mainstreaming



Round table discussions



Wrap up



Antarctica -Larsen C rift
Source: NASA





Thank You
Be aware, inspire and network!

