BE-AWARE Project



Bonn Agreement: Area-wide Assessment of Risk Evaluations

Co-financed by the EU – Civil Protection Financial Instrument

Why do we need a risk Assessment in the Greater North Sea?

- Increasing traffic and vessel size
- Significant transports of oil and HNS
- New maritime uses and demand for space
  - Energy generation
  - Marine protected areas
- Increased storminess

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Bonn Agreement
Accord de Bonn

Project Development

- Discussion on balance of resources and risk assessment since 2006
- 2010 Ministerial Meeting
- Risk Analysis Workshop, May 2011
- Application to EU Civil Protection Financial Instrument
- BE-AWARE I: 2012-2014
- BE-AWARE II : Started 2014

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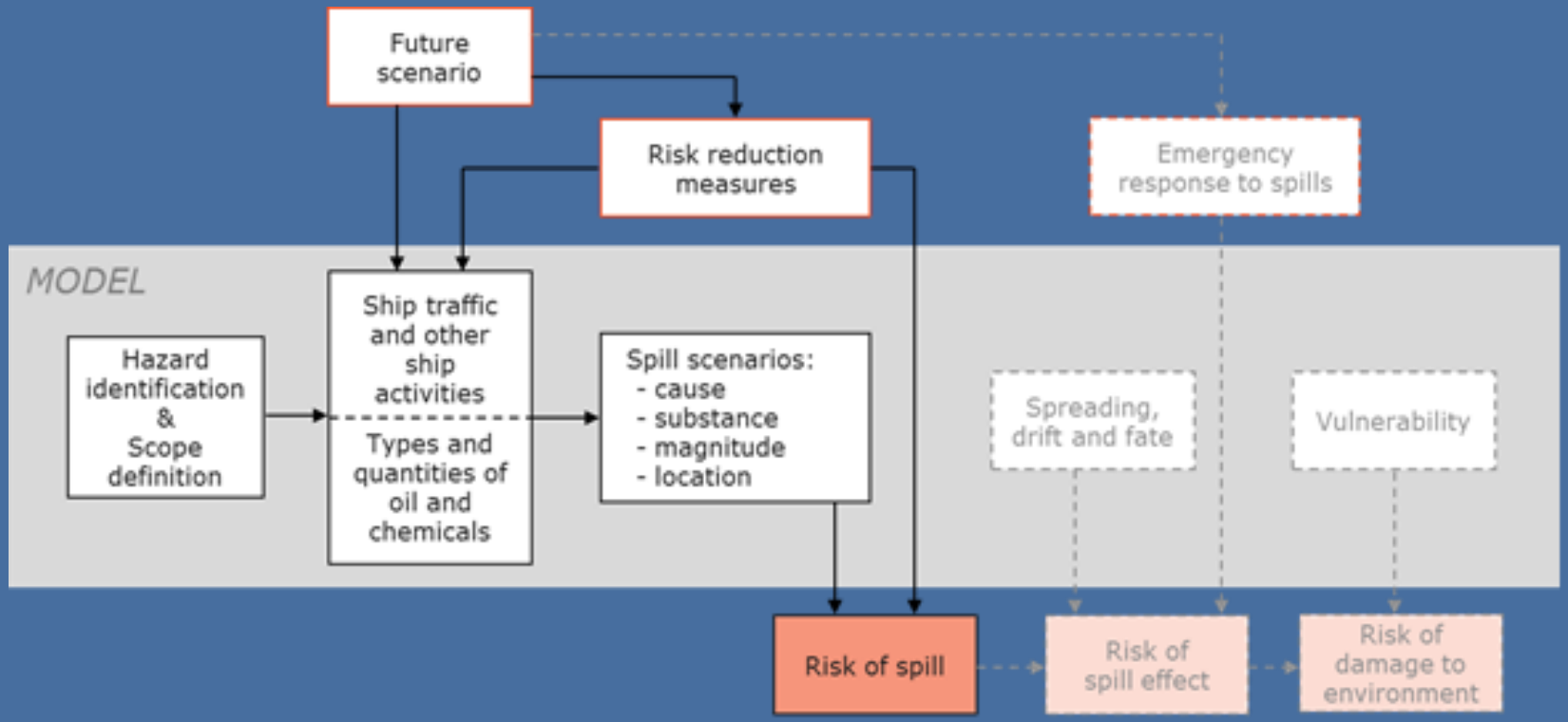
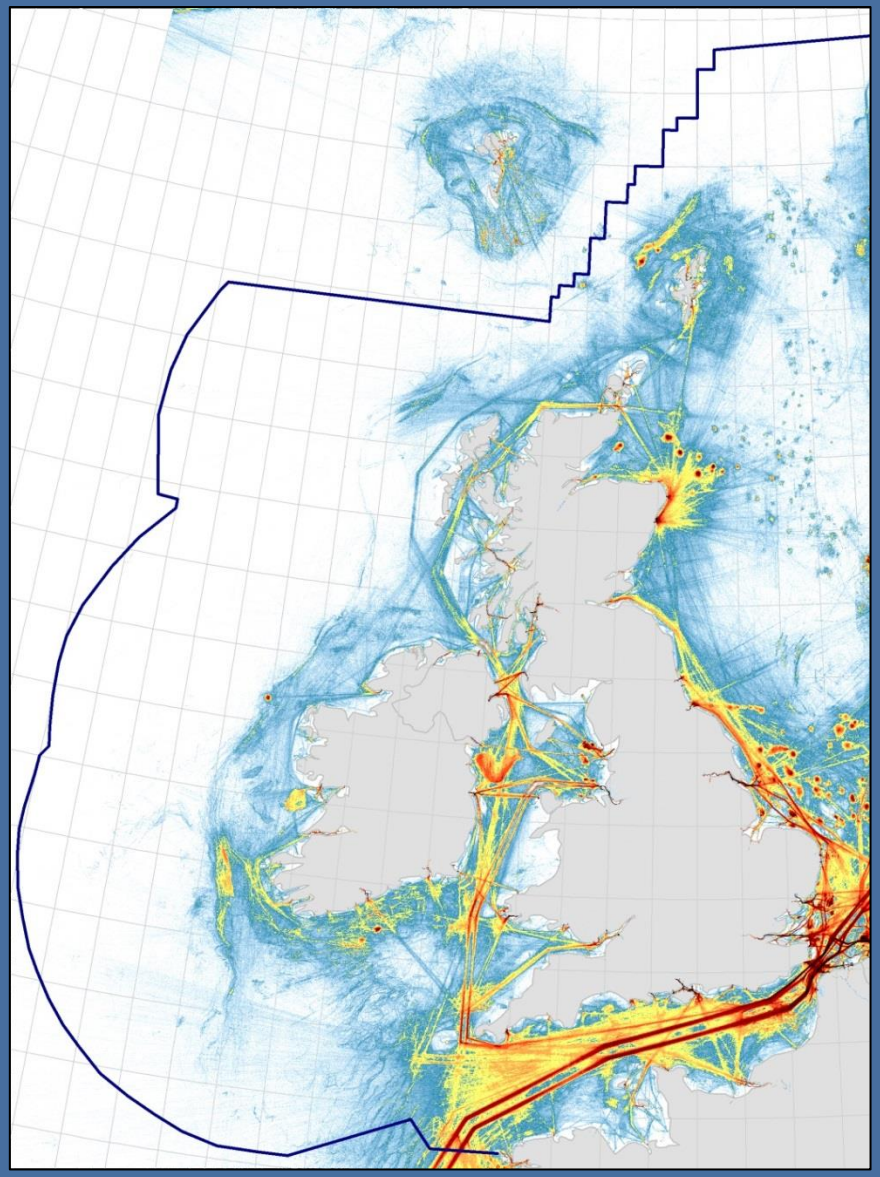
Bern Agreement
Accord de Berne

BE-AWARE: A project in two halves



BEAWARE I Objective

The overall objective of BE-AWARE I is to clearly understand the (sub) regional risk of marine pollution in the Greater North Sea and its approaches both now in 2011 and in 2020



Project Partners

Coordinating Beneficiary:

Bonn Agreement Secretariat

Associate Beneficiaries:

RWS Noordzee

RBINS MUMM

Admiral Danish Fleet HQ

Co-Financiers:

Norwegian Coastal Administration

Belgian Federal Public Service: Marine Environment Unit

Subcontractors:

COWI

MARIN

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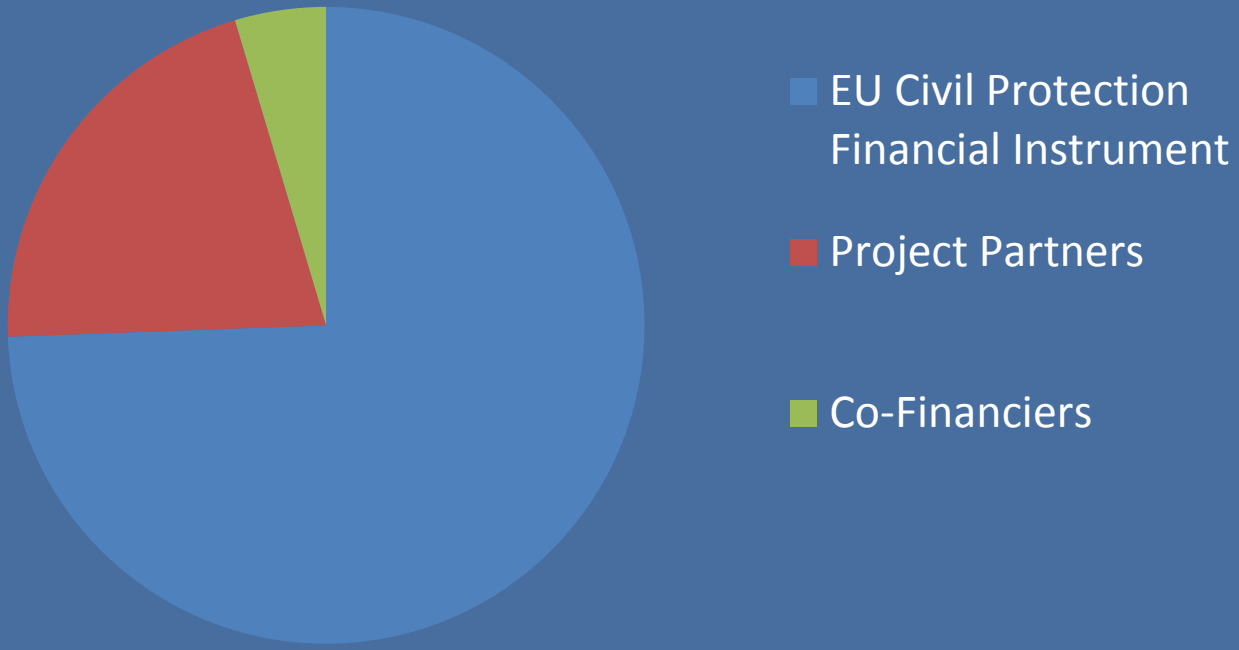
Project Funding: €540,800



This project is part funded by the European Union Civil Protection Financial Instrument

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Ship Collisions and Groundings

Ship Collisions with Platforms, Wind Farms and Fixed Objects

Analyse of the likelihood of different sized oil spills

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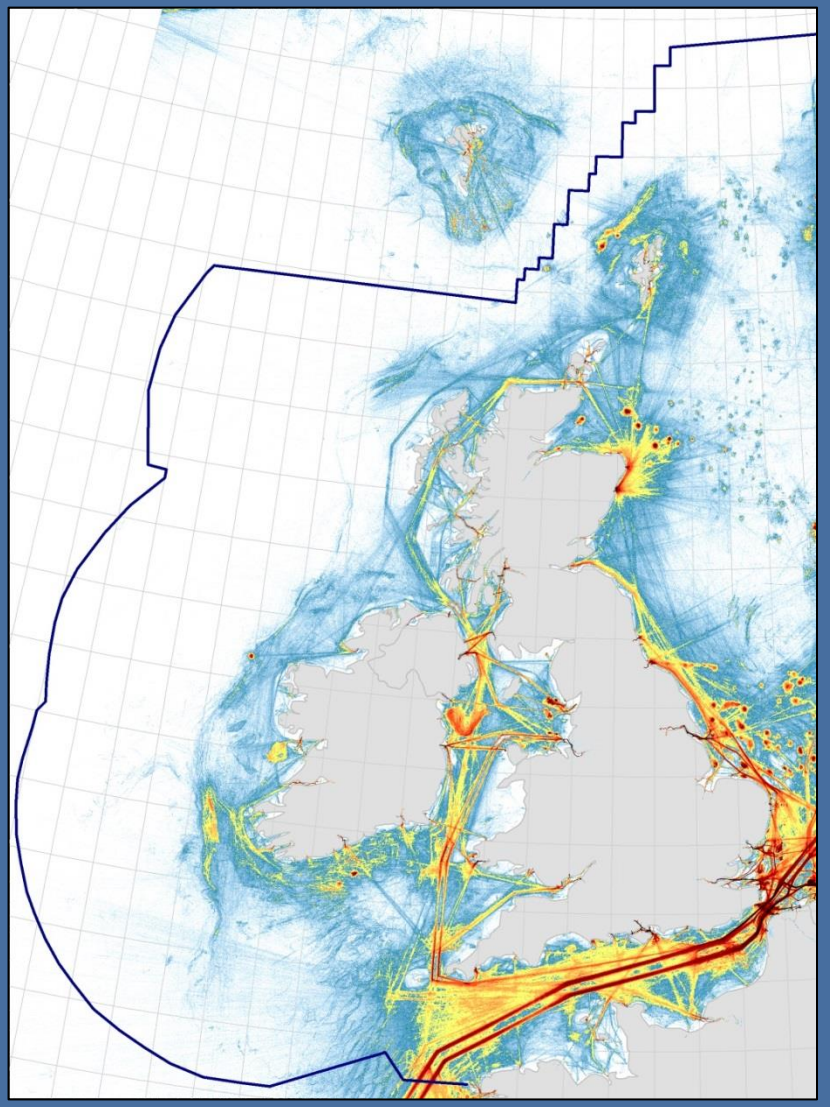
Qualitative analysis of the likelihood of HNS spills

Environmental and Socioeconomic Sensitivity Methodology

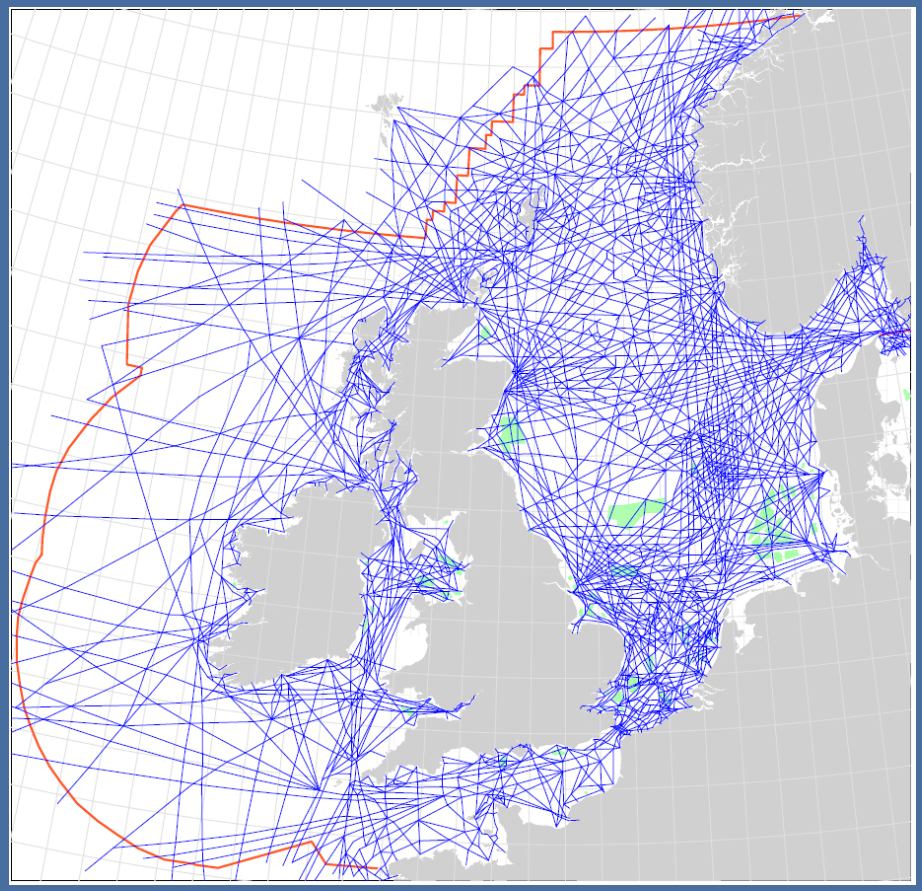
Methodology

- Traffic models
- Ship traffic model
  - AIS data for 1 full year
  - Coordination with IHS Fairplay
- Oil transport model (types and quantities)
- Future traffic model 2020

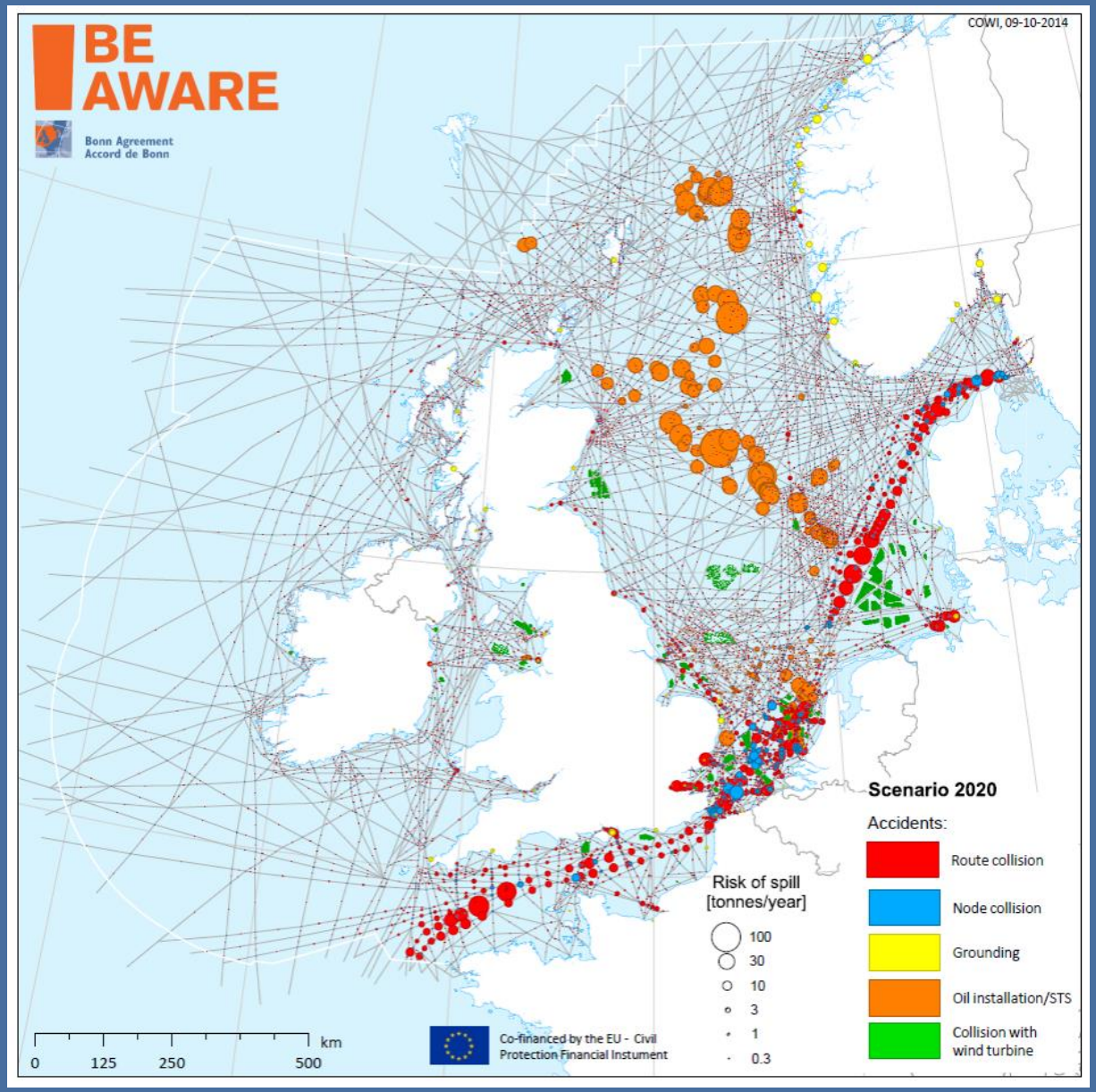


Methodology

- Accident models
- Locations
  - Open seas and port approaches (not ports, channels and rivers)
  - Each nodal point and each route leg midpoint.
  - Platforms
  - Wind farms
  - Groundings (representative)



Results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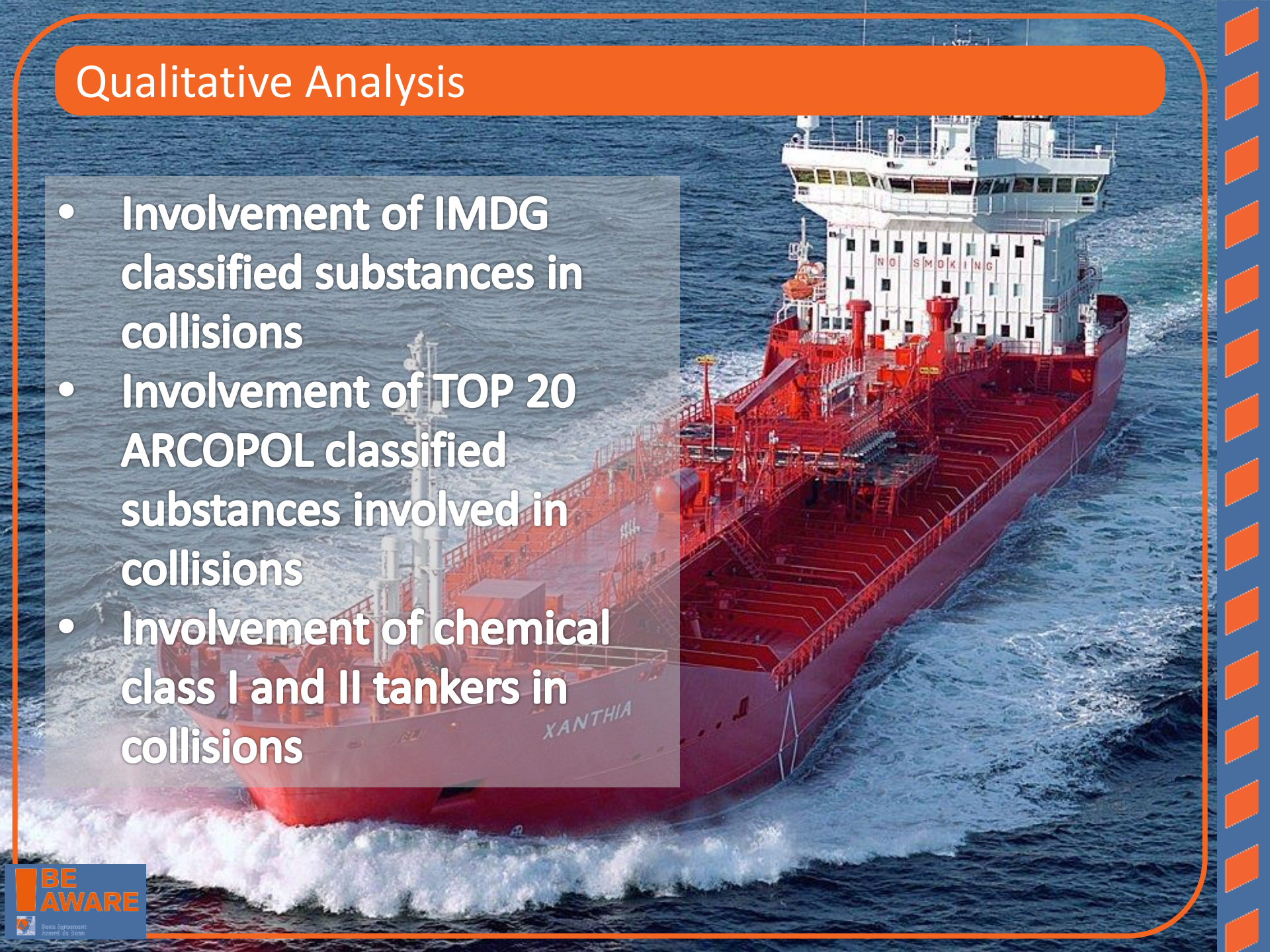
Bonn Agreement
Accord de Bonn
COWI, 09-10-2014
Scenario 2020
Accidents:
Route collision
Node collision
Grounding
Oil installation/STS
Collision with wind turbine
Risk of spill [tonnes/year]
100
30
10
3
1
0.3
0
125
250
500
km
Co-financed by the EU - Civil Protection Financial Instument

Qualitative HNS Analysis

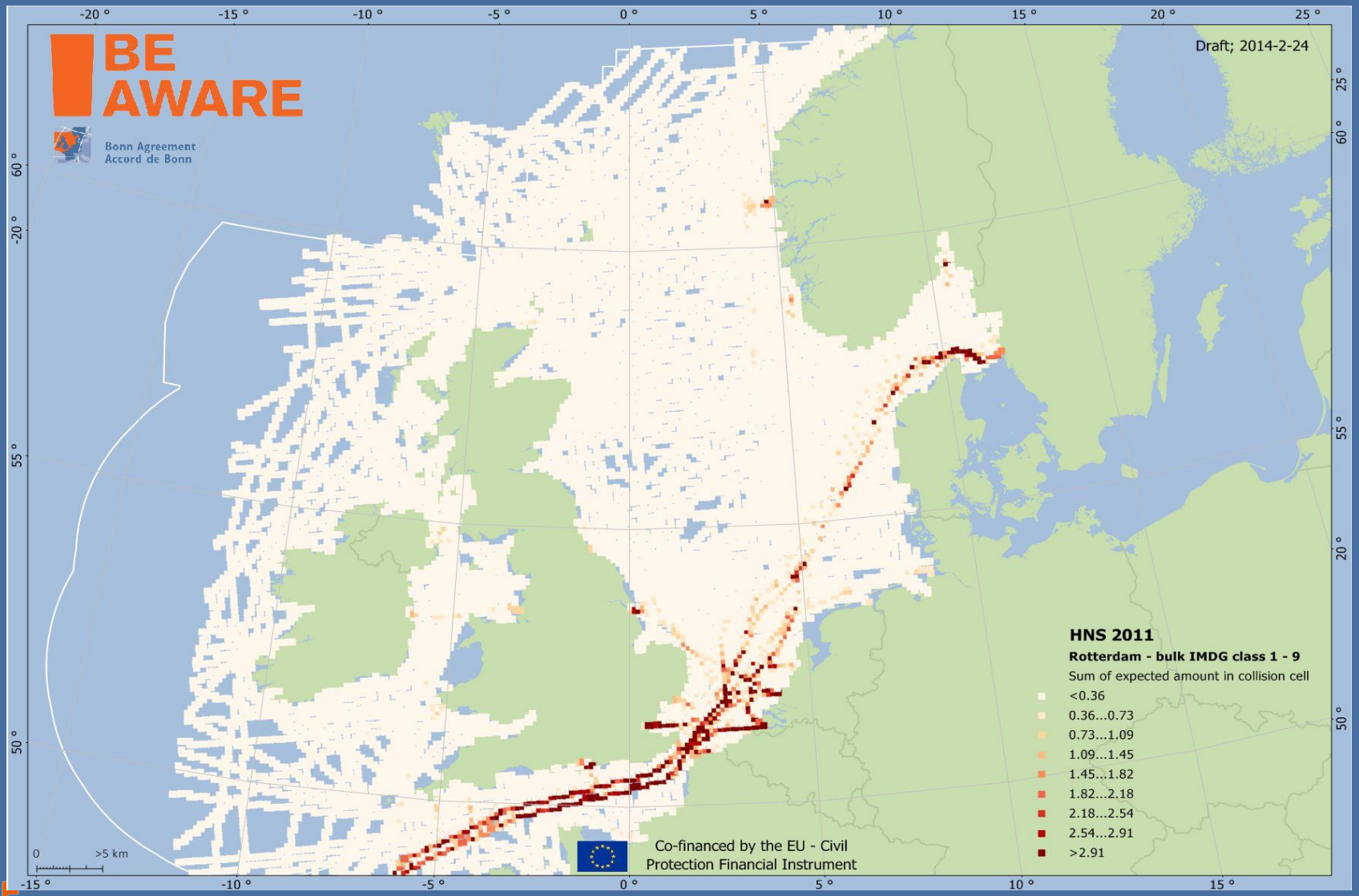
- Top 100 most transported goods (bulk and packed)
- Each dataset divided into IMDG, GESAMP and ACROPOL
- SAMSON accident database used to estimate accidents of HNS shipments or vessels per cell

Qualitative Analysis

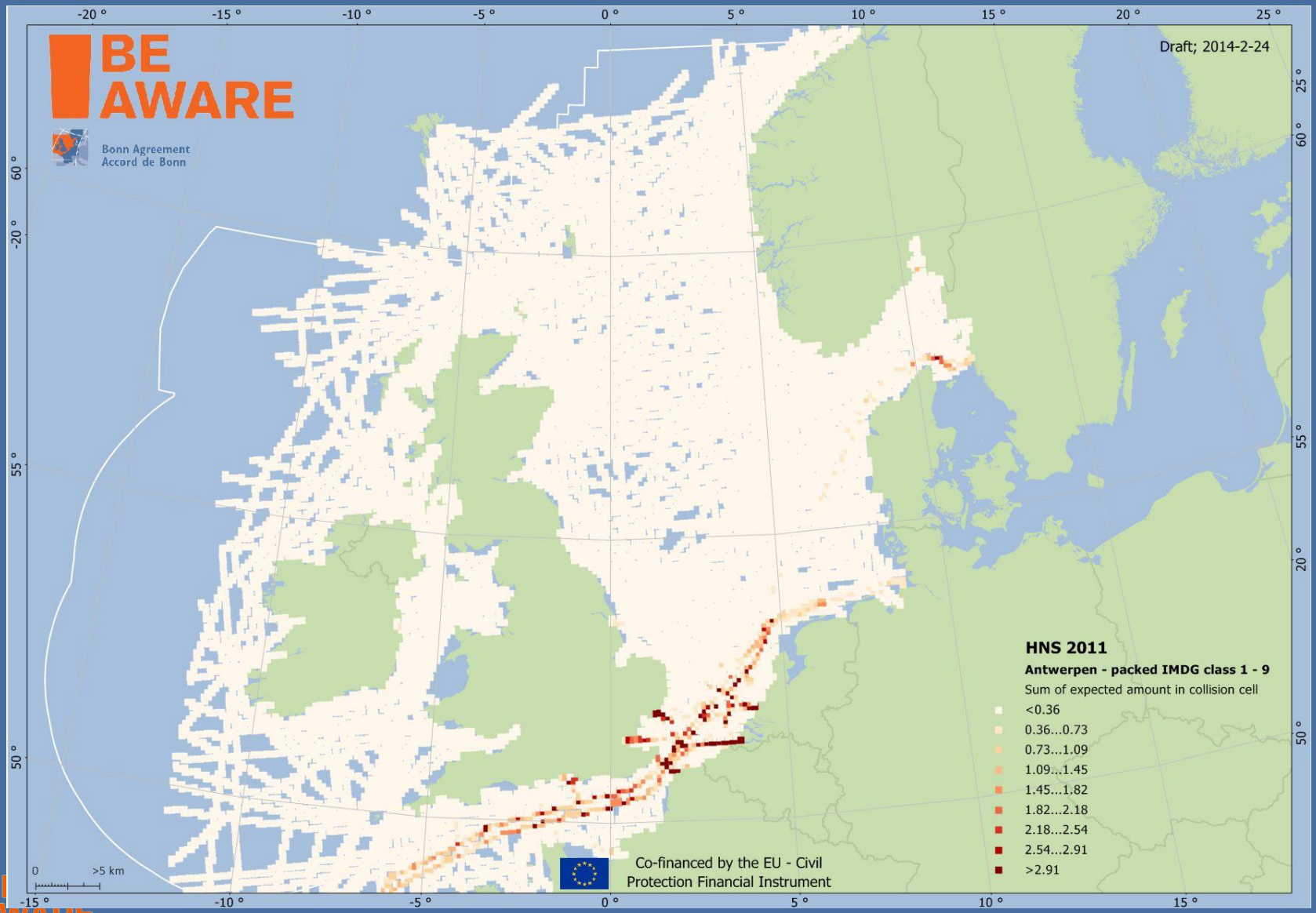
- Involvement of IMDG classified substances in collisions
- Involvement of TOP 20 ARCOPOL classified substances involved in collisions
- Involvement of chemical class I and II tankers in collisions



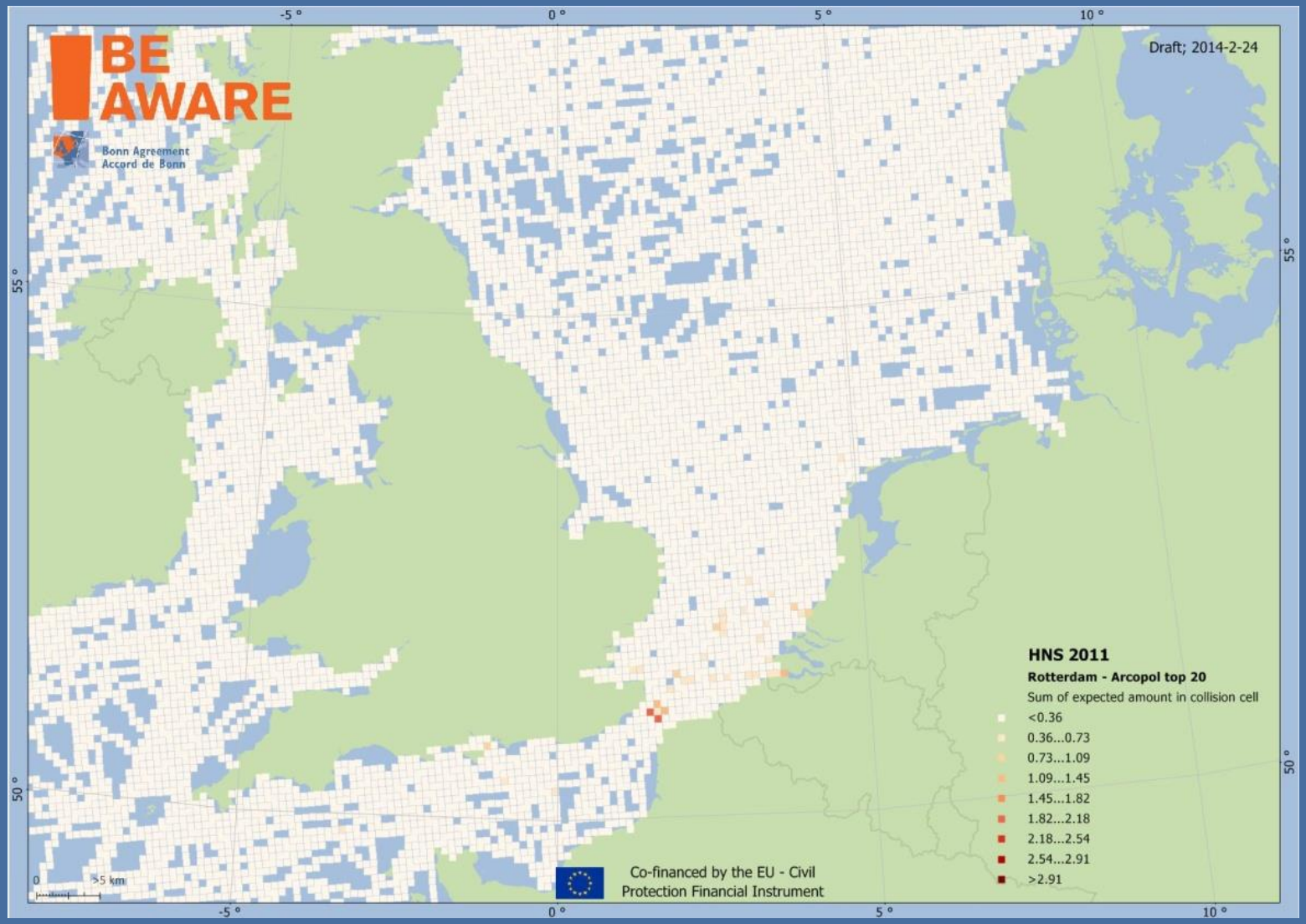
Geographical Distribution: Bulk IMDG 1-9



Packed goods IMDG 1-9 Antwerp



Packed Goods: ARCOPOL Top 20



BE-AWARE II Objectives

The overall objective of BE-AWARE 2 is to identify the most effective future risk reduction and response measures for each sub region, by building directly upon the outcomes of the BE-AWARE project

Project Partners, Co-Financers & Subcontractor

Bonn Agreement
Accord de Bonn

Rijkswaterstaat
Ministerie van Infrastructuur en Milieu

cetmef

KYSTVERKET

mca
Maritime and Coastguard Agency

Préfecture Maritime
DE LA MANCHE ET DE LA MER DU NORD
> Accueil

KUSTBEVAKNINGEN
SWEDISH COAST GUARD

COWI

Irish Coast Guard
GARDA CÓSTA na hÉIREANN

HAVARIEKOMMANDO
Central Command for Maritime Emergencies Germany

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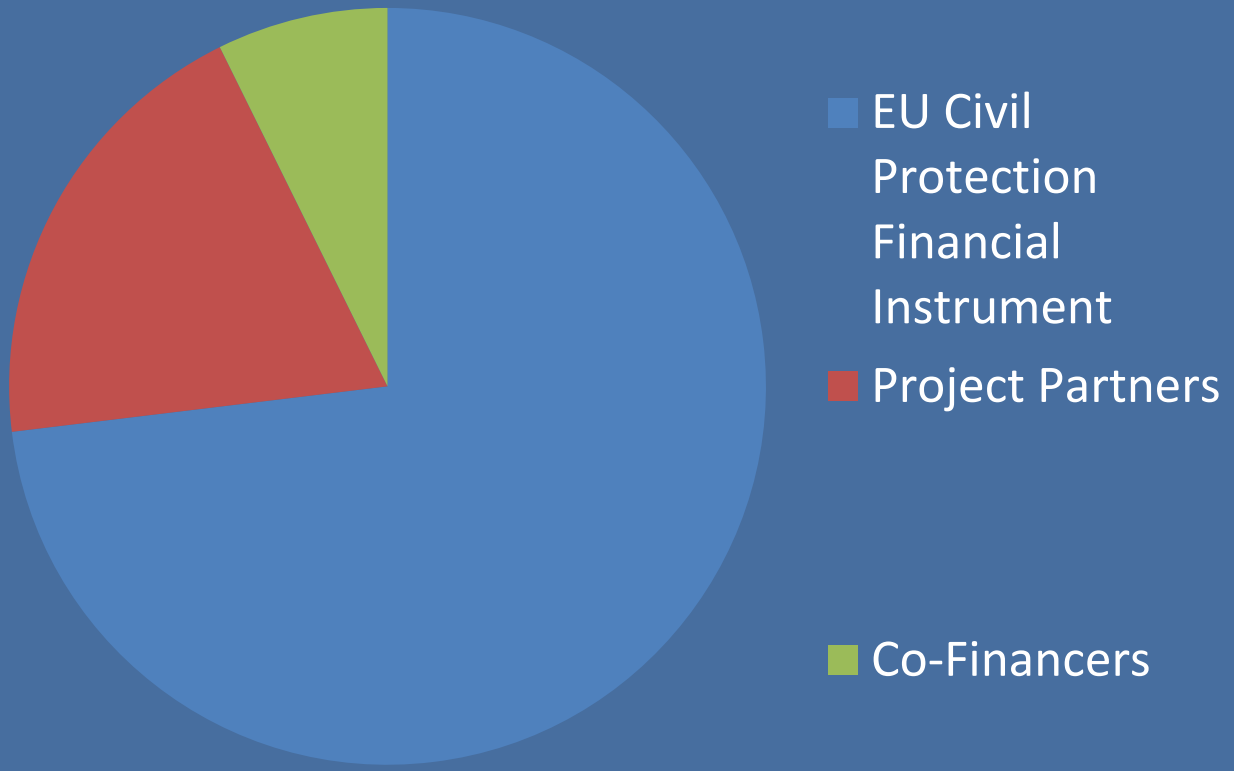
Project Funding: € 684,178



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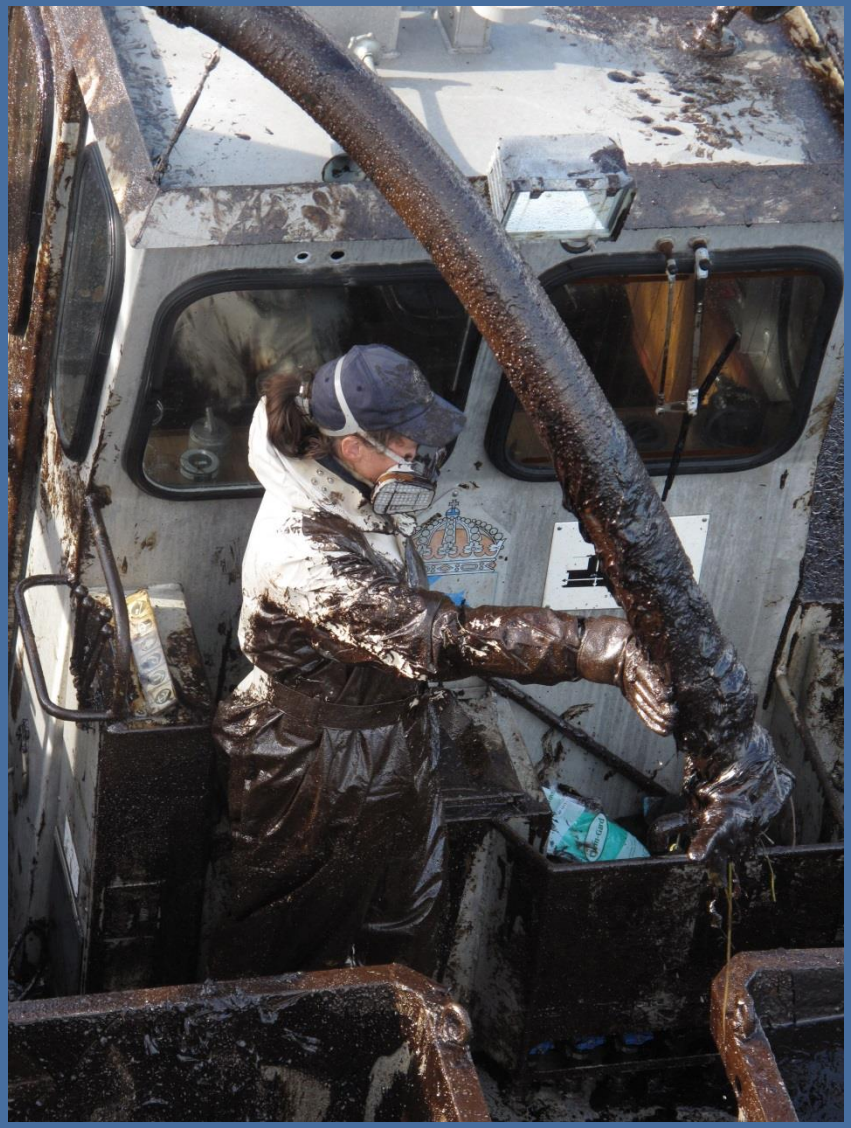
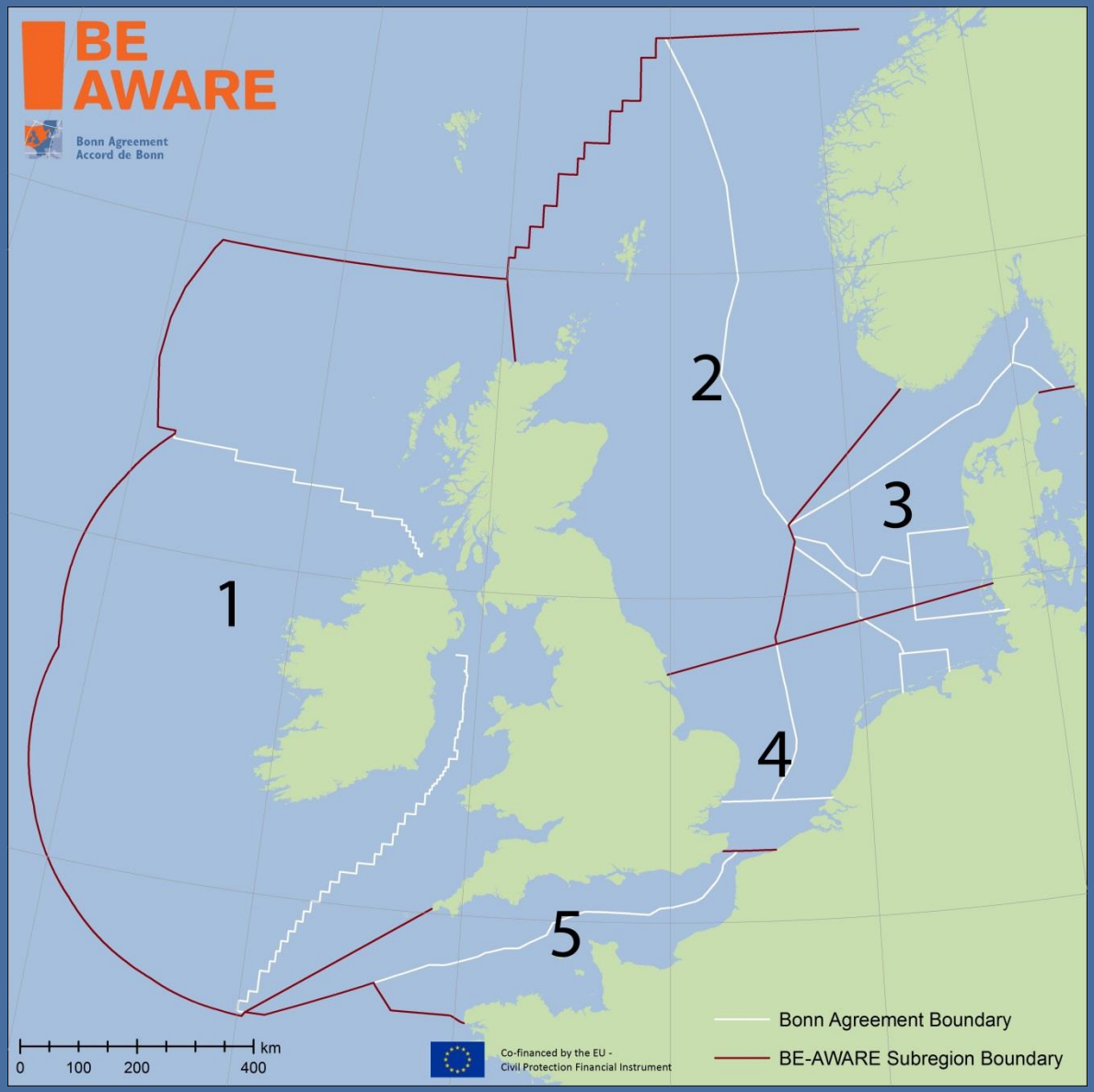
How do we best manage the risk of spills?

Identify possible future scenarios



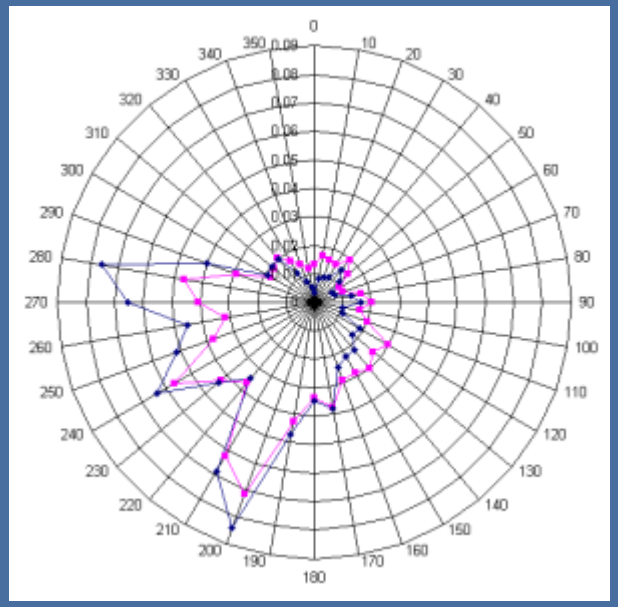
- Improved navigational aids
- Increased/modified response capacity
- Improved response technology

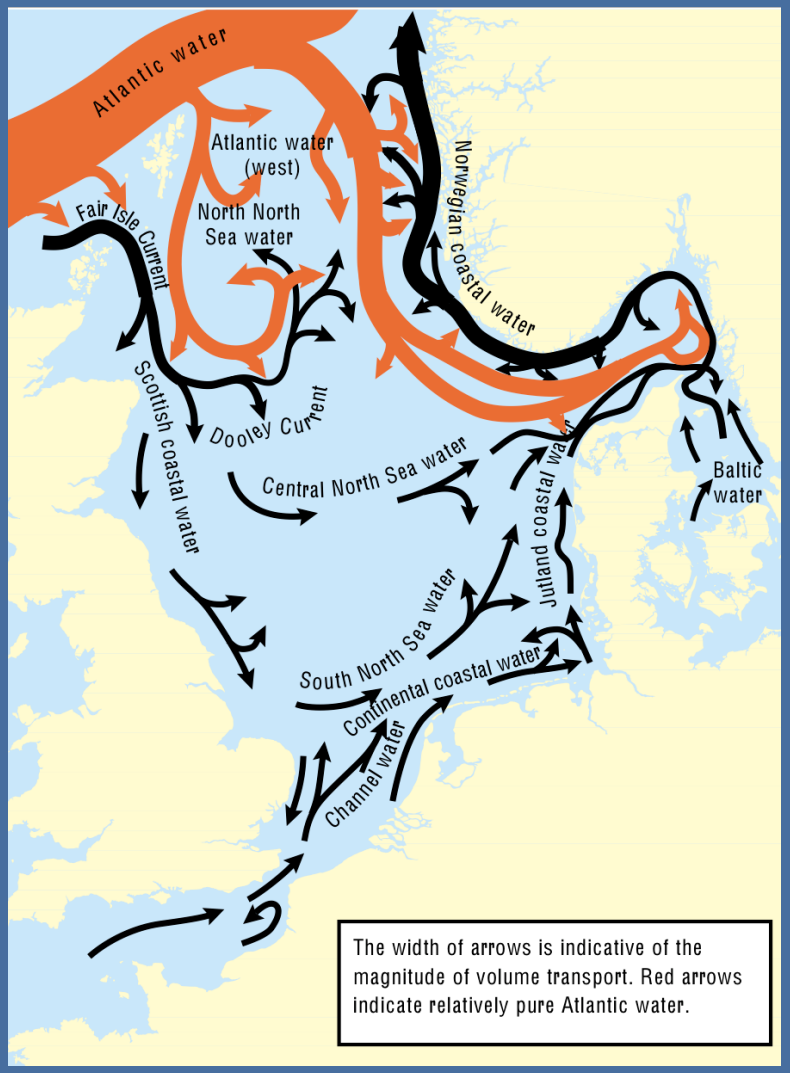
Consider sub regions



Model the fate of oil

- Wind direction
- Currents

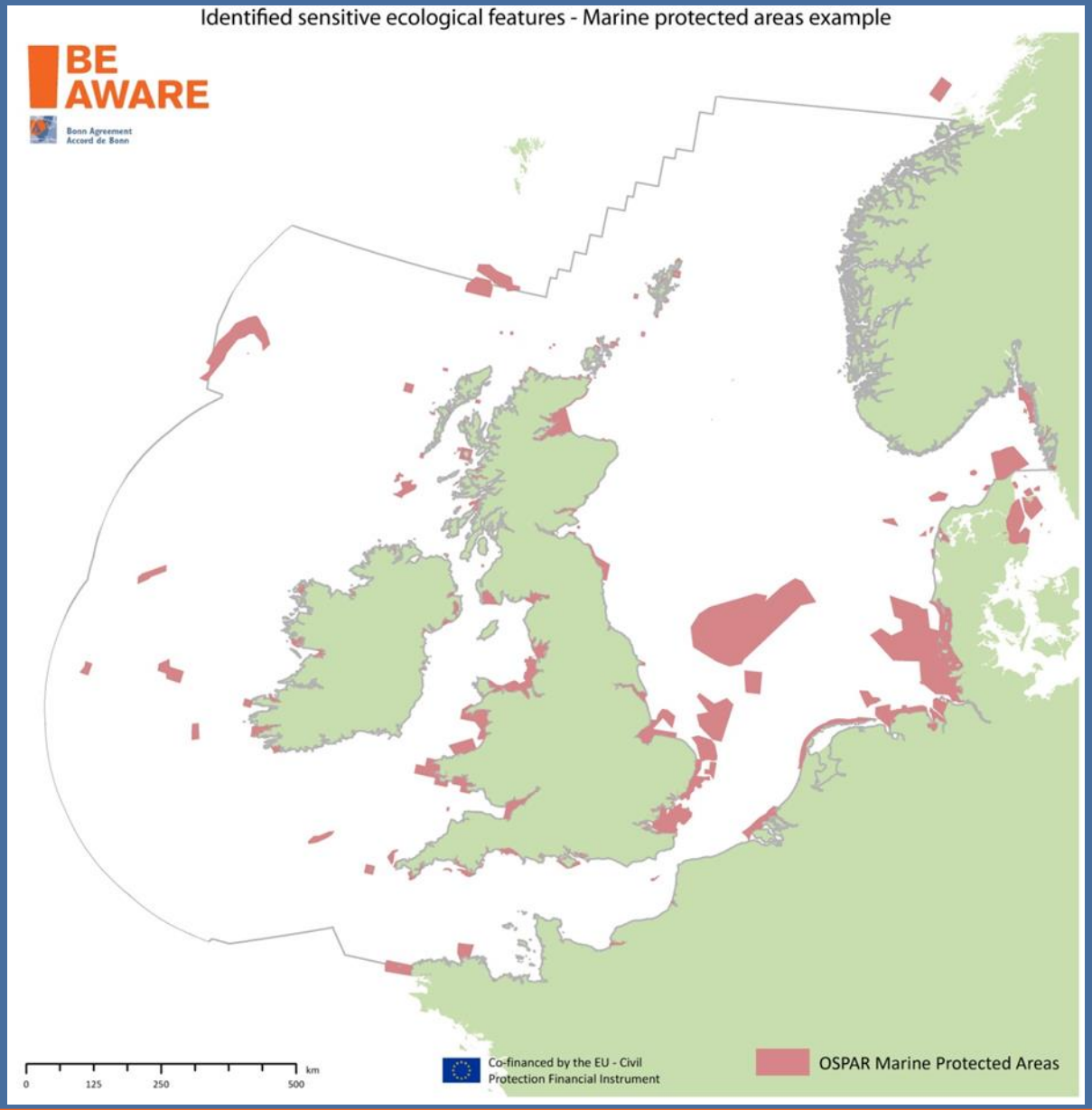




Model outflow

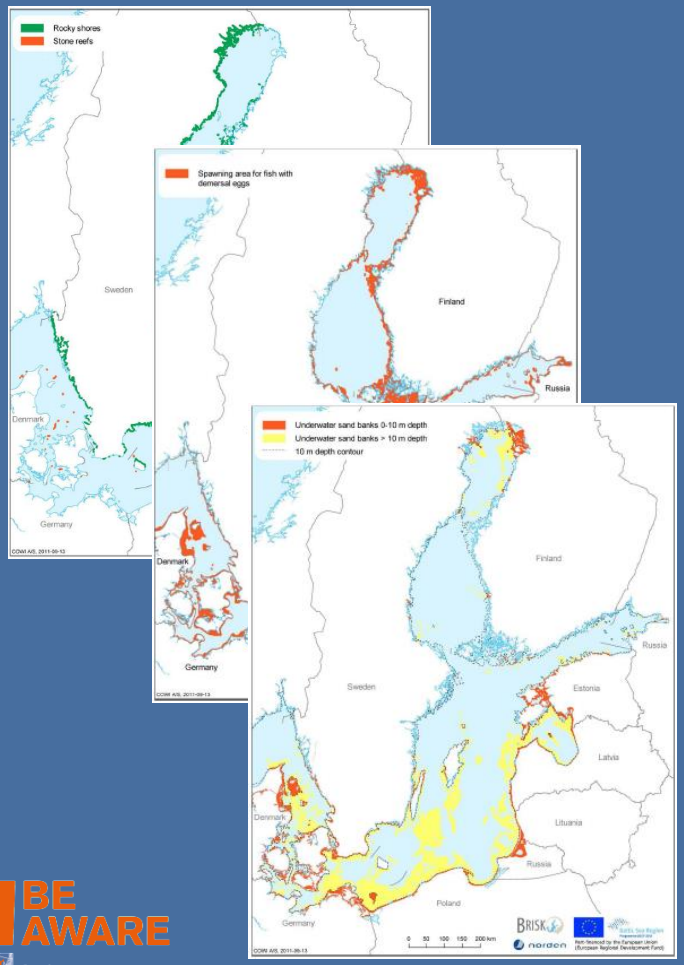
- Model outflow:
  - Different scenarios
  - Different weather conditions
  - Different oil types
- Model response
  - Ships, capacity, boom length
  - Visibility, wave height, daylight

Environmental and socioeconomic sensitivity



Examples of expected output

single-feature maps → Total (seasonal) Vulnerability Maps



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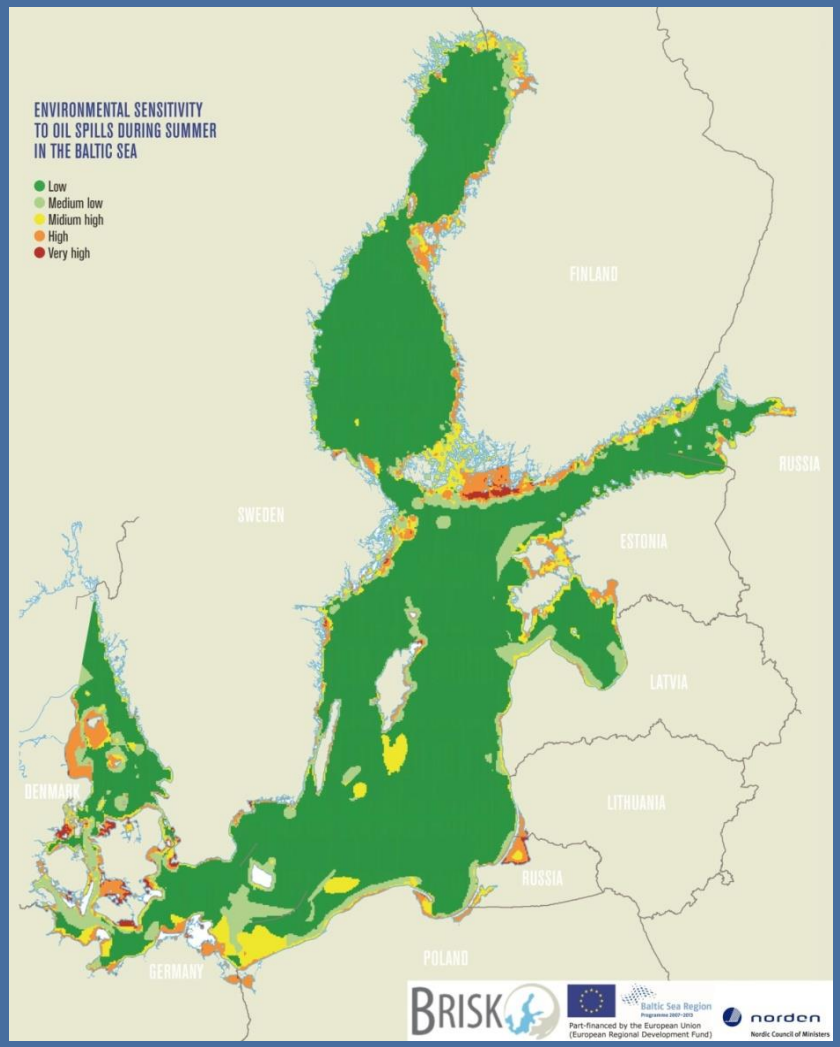

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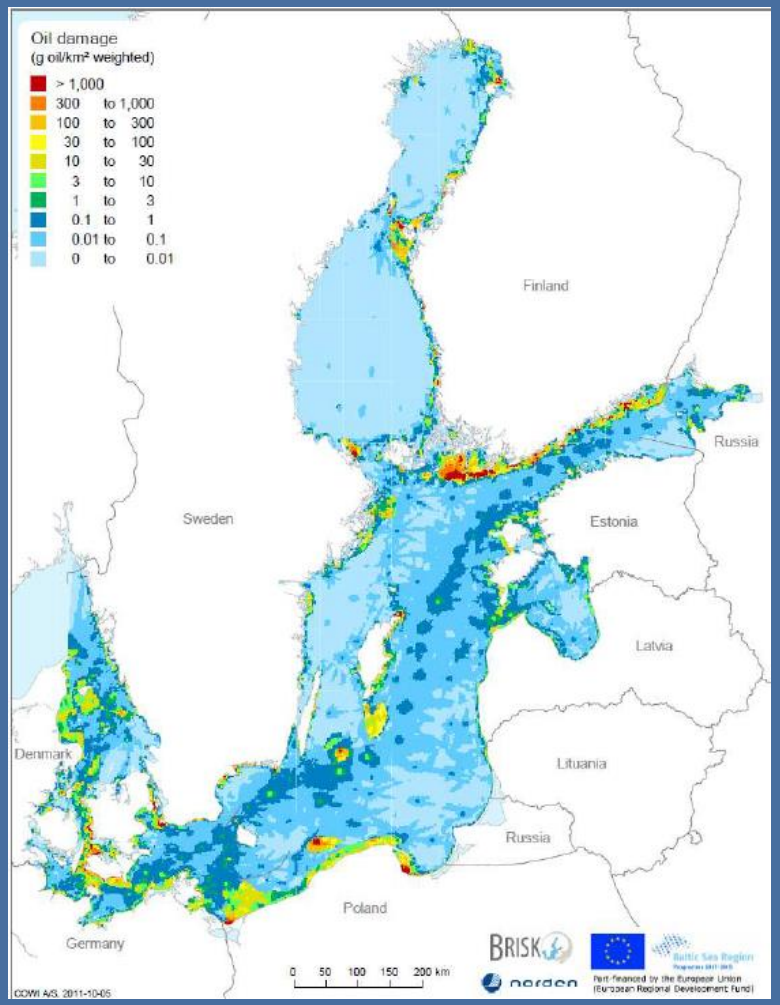
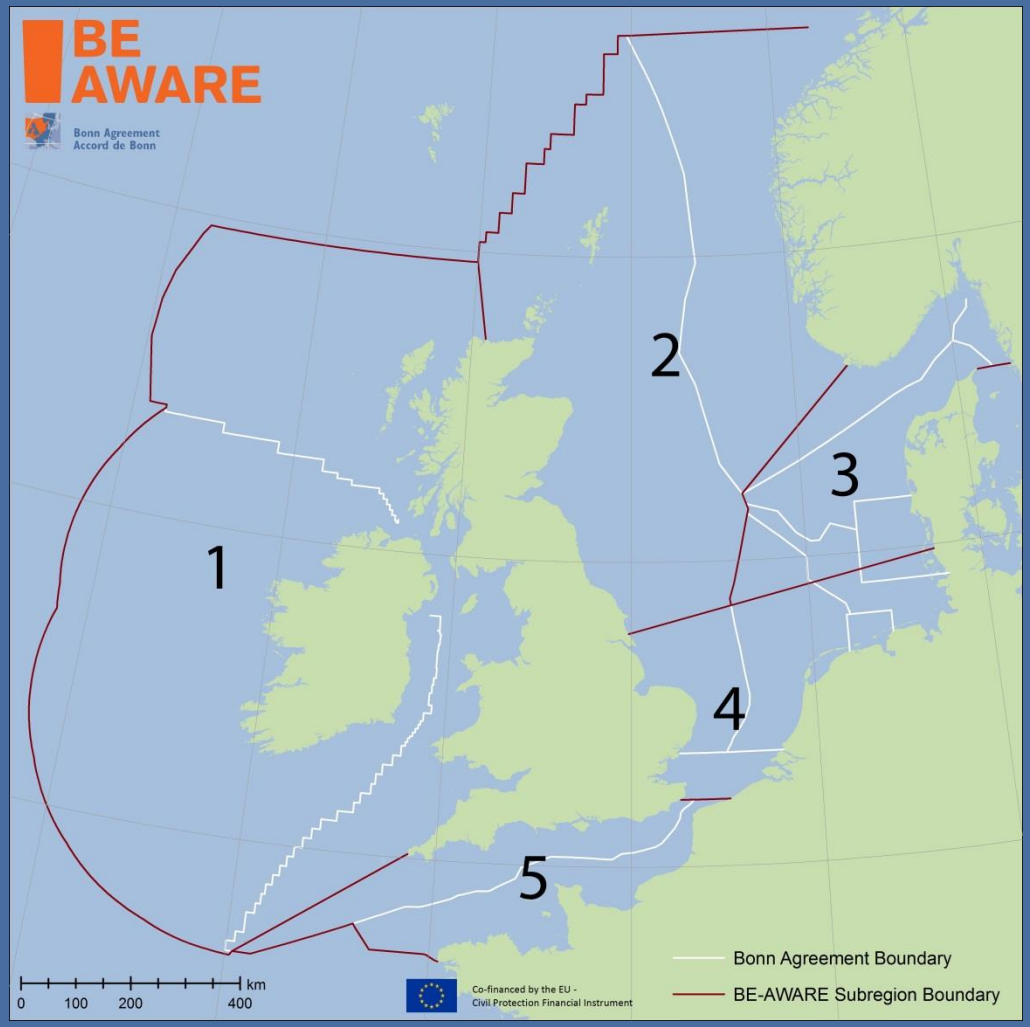
Impacts of oil spills

- Combine modelled spills and sensitivity
- Outline impact for different scenarios and spill sizes



Risk Management Conclusions

- Most effective sub regional scenarios
- Cost effectiveness of sub regional scenarios
- Risk management conclusions



Project Structure

A) Project Management

- Administrative and financial management
- Information exchange

B) Publicity

- Kick off meeting, Jan 2014, France
- Communication plan
- Website, Final report

C) Methodology

- Method seminar, Southampton, UK
- Development of a method note
- Identify Future Scenarios

Project Structure

D) Project Database

- Collect data in line with Data Request Note
- Collect information on existing response capacity

E) Oil spill modelling

- Application and test of oil spill and response model modifications
- Execution of scenario modelling
- Extraction and presentation of results

F) Sensitivity Analysis

- Mapping of sensitive environmental features
- Mapping of sensitive socioeconomic features
- Ranking of features

G) Project Workshop

- Workshop, Jan 2015, Norway
- Scrutinise results of the preceding tasks and review the approach for the upcoming tasks

H) Impact Assessment

- Combine modelled scenarios with sensitivity analysis
- Identify impacted areas

I) Risk Management Conclusions

- Assess the different scenarios and develop sub regional risk management conclusions
- Risk Management Conclusions Workshop, Sept 2015, Denmark

J) Project Conference

- Final Conference, Sweden, Nov 2015
- Review of project results

- Present the project to North Sea stakeholders
- Scrutinise and comment on project progress to date
- Consider upcoming project tasks and results
- Receive stakeholder feedback

Project Seminar Objectives

Questions?

Thank you

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