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DG ECHO/EMSA Workshop on PPR risk assessments

2009- 2012 BRISK and BRISK-RU Projects

1. First overall risk assessment of pollution caused by shipping accidents covering the whole Baltic Sea area
2. Identification of missing response resources needed to effectively tackle major spills of oil and hazardous substances
3. Preparation of investment plans on how the countries can jointly improve preparedness

✓ Implementation of HELCOM Baltic Sea Action Plan

BRISK Model

- ✓ Hazard identification and choice of scenarios
- ✓ Ship traffic model
- ✓ Transport of oil and chemicals in the Baltic Sea
- ✓ Vulnerable areas and classification of vulnerability and damage
- ✓ Frequency and quantity of oil chemical spillage
- ✓ Spreading and containment of spilt oil and hazardous substances

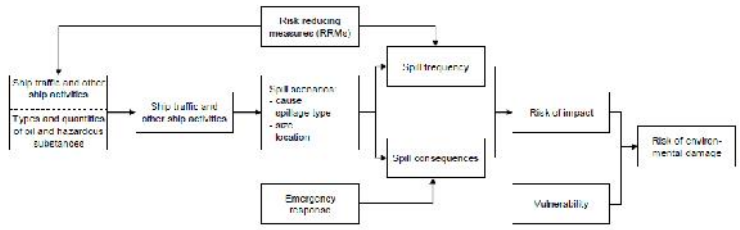


Figure 1-1 Data and calculation flow of the model

Challenges/limitations

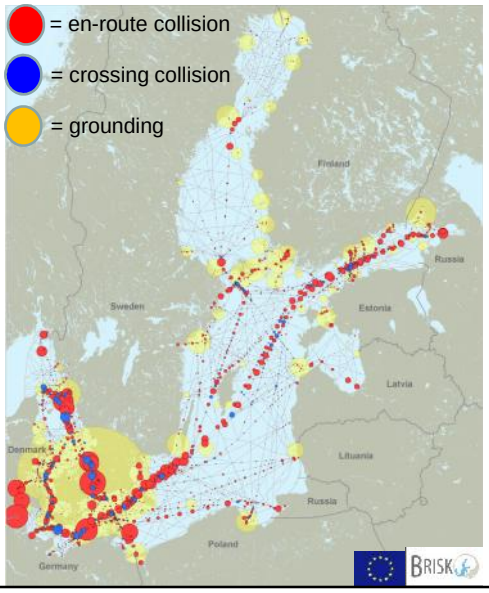
- Quantitative risk analyses are complex and highly technical, and specific expertise is required to execute an analysis.
- The analyses are time-consuming and resource-intensive.
- In international sea areas, the risk analysis needs support from the appropriate authorities, to gain access to required data and expertise, and to lead to credible results.
- Several risk models involve uncertainties, e.g. the accident probability models based on traffic flow theory are known to lead to significantly different high-risk areas compared to other risk models available in the scientific literature
- Lengthy reports. Numerical results should be interpreted alongside a clear understanding of the assumptions, model limitations and uncertainties. Time to reflect on the meaning of results needed in the risk assessment phase.
- The analyses are typically conducted by commercial companies. The methods used in the analyses are not always transparent.

Challenges/limitations

- ✓ Focus on oil
- ✓ Difficult to get the complete picture regarding HNS
- ✓ A snapshot difficult to repeat and identify changes

Risks of shipping accidents in the Baltic

- The expected number of accidents per year for ships of 300 gross tonnage and above:
- 44 grounding accidents
- 4 ship-ship collisions
- A collision is about on average 100 times as dangerous in terms of spill risk as a grounding
- Highest risks in the Gulf of Finland, Danish straits, Åland archipelago



Risk of small spills (0-300 tons)

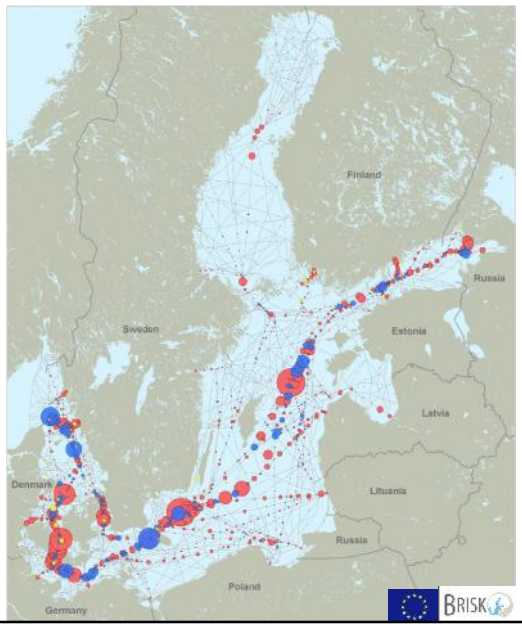
- Illegal spills
- En-route collision
- Crossing collision
- Grounding

Less illegal spills towards North Sea probably due to:
- Intensive observation by authorities
- Higher traffic intensity
- Proximity of coast

Risk of the largest spills (5,000–150,000 tons)

- En-route collision
- Crossing collision
- Grounding

Hot spots:
- Gulf of Finland
- Baltic Proper
- Bornholm
- Fehmarn Belt
- Great Belt
- Kattegat/Skaw



Implementation

Identification of the areas with highest risk for oil spills and environmental damage allows for:

- wiser management of human activities at sea
- better information basis for effective maritime spatial planning
- increased public awareness on actual risks related to shipping
- optimizing response resources and strategies – pooling of resources of several countries around hot spot areas
- designing new risk control measures to improve safety of navigation

OPENRISK - methods for maritime risk assessments on accidental spills (2017-2018)

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Some facts:

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BRISK-RU financed by the Nordic Council of Ministers

Part-financed by EU (European Regional Development Fund)
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