SEAS

Shaping European Research Leaders for Marine Sustainability

Mitigization of the deep-sea mining policy process in Norway (Mitigate it till you make it!)

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UNIVERSITY OF BERGEN

Background

Context: blue growth and the Ocean

‘We want the transition to a sustainable blue economy to be like a new industrial revolution.’

Virginijus Sinkevičius, June 2021.

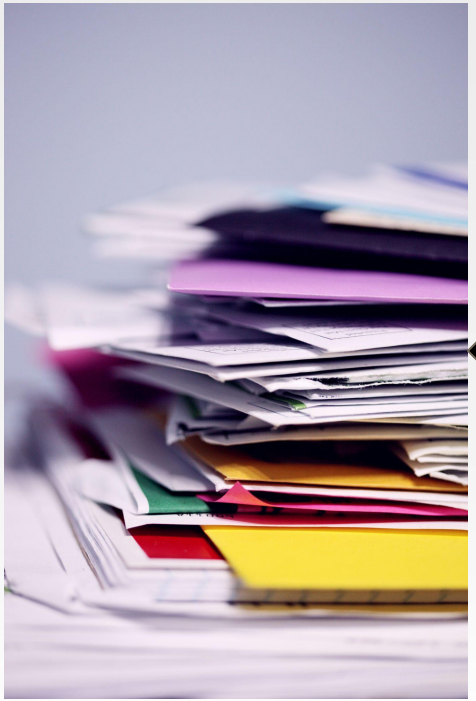
‘Norway will maintain its position as a world leader in sound ocean management, and will promote value creation from the ocean.’

Blue Opportunities, The Norwegian Government's updated ocean strategy, 2019.

Policy challenges

Policy makers need to deal with a broad range of issues. Voting in parallel regarding questions such as reproductive healthcare and mineral resources is not uncommon. What does it mean when we think about science for policy?

Methodology: text as data



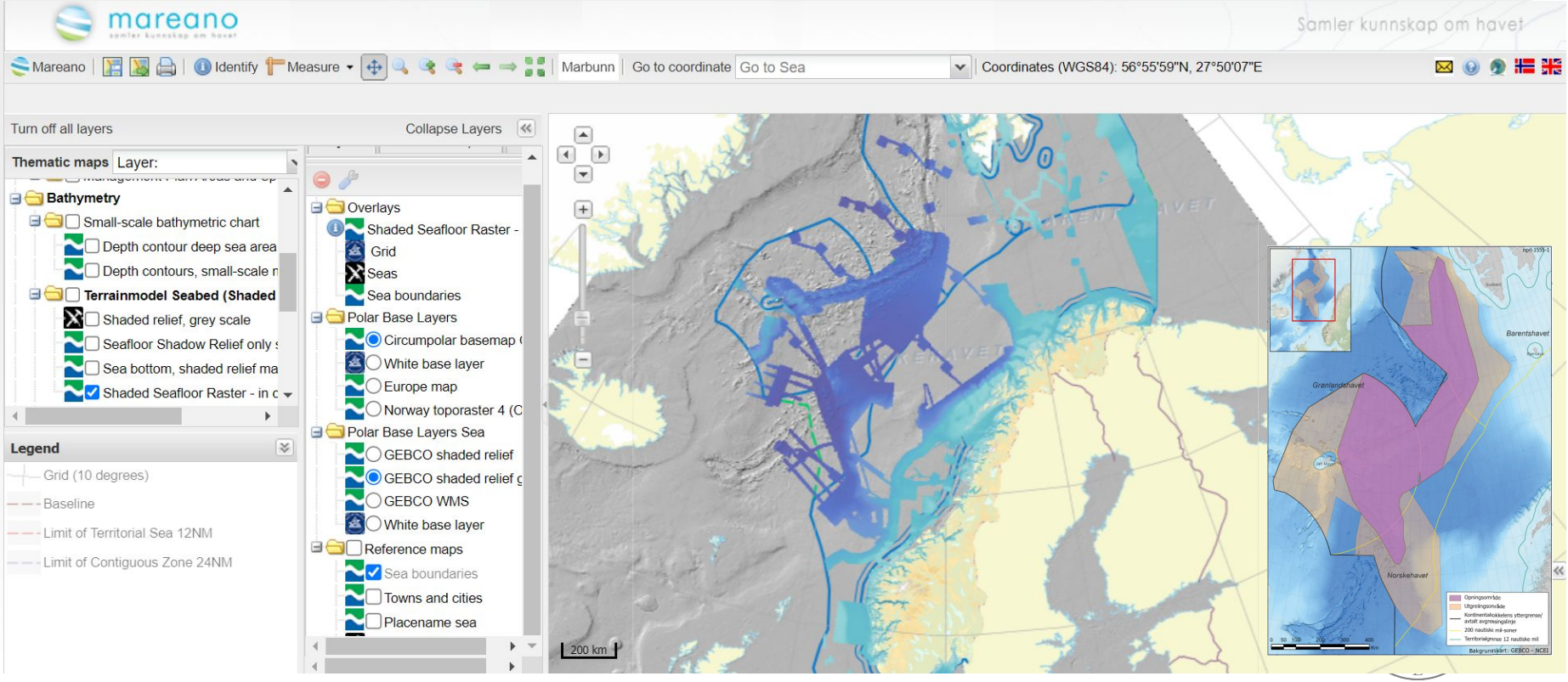
Photos: Alexander Grey and Maarten van den Heuvel on Unsplash

Deep-sea mining (DSM) policy context in Norway

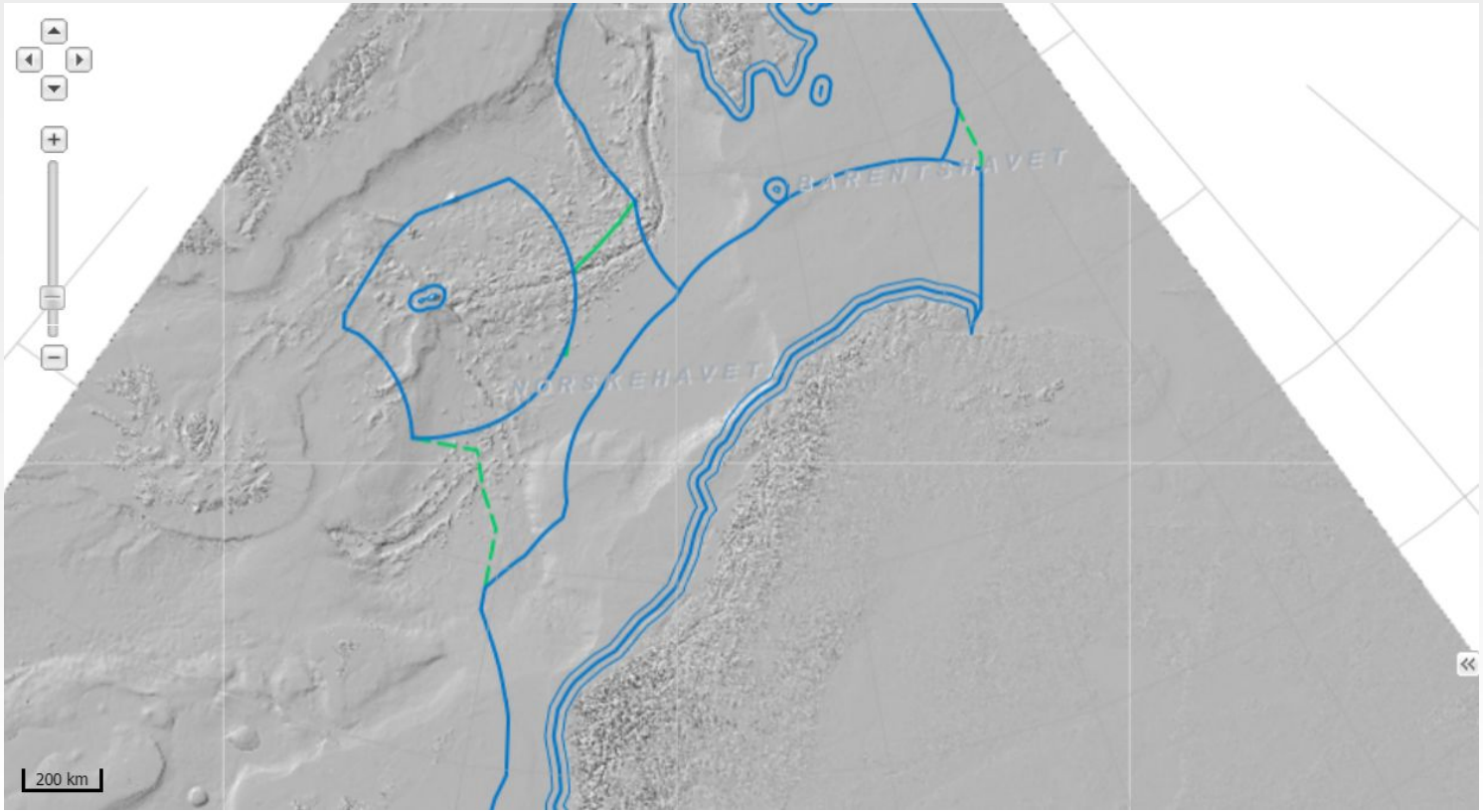
DSM in Norway: opening process

Timeline overview of the process of opening the Norwegian continental shelf for mineral activities (regjeringen.no)

DSM in Norway: where is this?



DSM in Norway: where is this?



Question in focus

How are the different knowledges and their scientific uncertainties translated for the DSM opening process in Norway? (How science becomes policy?)

Photo by Joseph Rosales on Unsplash

Question in focus

Why this question?

Methodology: document analysis in numbers

Impact Assessment: 40,611 words.
Full sample, with reports: 284,206 words.
Field notes: 12,992 words.
Data analysis notes: 5,864 words.
“Data points” in this presentation: 257.

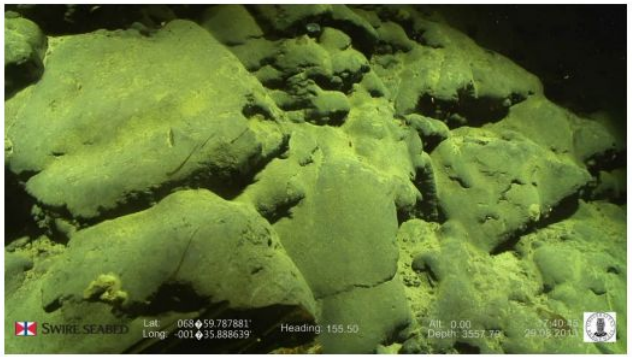
Document in focus

OLJE- OG ENERGIDEPARTEMENTET

Høringsdokument

Konsekvensutredning - undersøkelse og utvinning av havbunnsmineraler på norsk kontinentalsokkel

Del av åpningsprosessen etter Lov om mineralvirksomhet på kontinentalsokkelen (havbunnsmineralloven)
27. oktober 2022



Results: document analysis

Transition narratives and uncertain certainty.

Results: transition narratives

‘Extraction of minerals from the seabed may in the future become a new and important industry for Norway and at the same time help to ensure global access to important metals. A prerequisite for such extraction is that the resources can be harvested in a profitable way with an acceptable degree of environmental impact.’

Konsekvensutredning - undersøkelse og utvinning av havbunnsmineraler på norsk kontinentalsokkel, 2022, Preface, pp. 3.

Results: transition narratives

Why is it important?

Results: uncertain certainty

‘There is currently great uncertainty both related to the extent of profitable seabed minerals on the continental shelf and which - and how large - economic and social effects a possible recovery will have. What seems clear is that there can be a potentially great value for society if areas are opened up and significant resources of valuable minerals are detected and extracted.’

‘There is great uncertainty related to the extent of resources, the profitability of these and possibly extraction methods.’

Konsekvensutredning - undersøkelse og utvinning av havbunnsmineraler på norsk kontinentalsokkel, 2022, pp. 9 and 12.

Results: uncertain certainty

‘Today, there is great uncertainty both related to the extent of profitable seabed minerals on the continental shelf, which technological solutions will be used, where processing will take place and which final product the minerals will be included in. The uncertainty is so great that no good scientific basis has been found on which to base the analyzes of scenarios.’

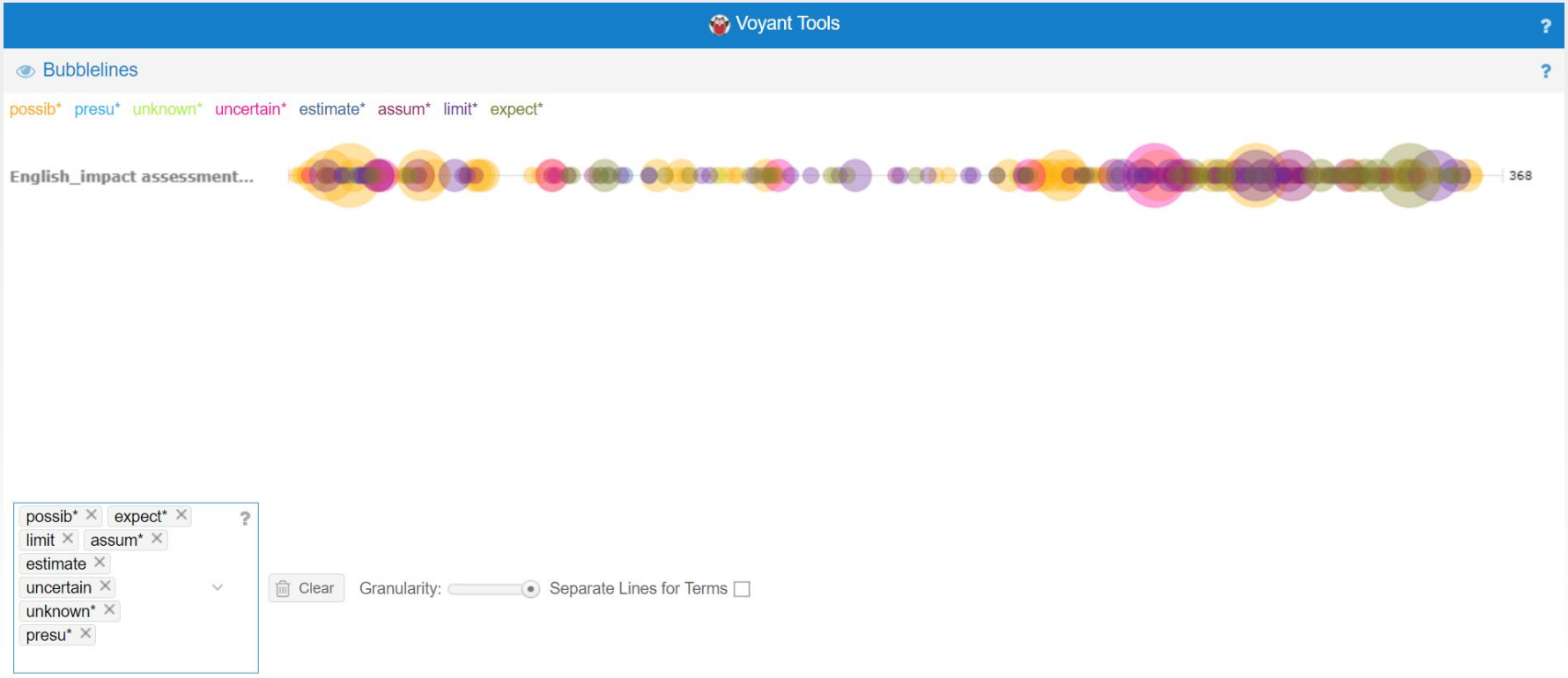
Konsekvensutredning - undersøkelse og utvinning av havbunnsmineraler på norsk kontinentalsokkel, 2022, pp. 100.

Results: uncertain certainty

‘Uncertainty is understood in a risk context as not knowing the true value of a quantity or the future consequences of an activity. Impact assessment as a tool for predicting effects is fraught with uncertainty. This also applies in the present study. The deep sea is poorly mapped, and current knowledge about a number of characteristics of both seabed mineral activity and the environmental values that can be affected is very sparse. This means that assumptions have been made about both the activity itself and the presence of environmental values and their vulnerability in the investigation.’

Konsekvensutredning - undersøkelse og utvinning av havbunnsmineraler på norsk kontinentalsokkel, 2022, pp. 93.

Results: uncertain certainty looks like this



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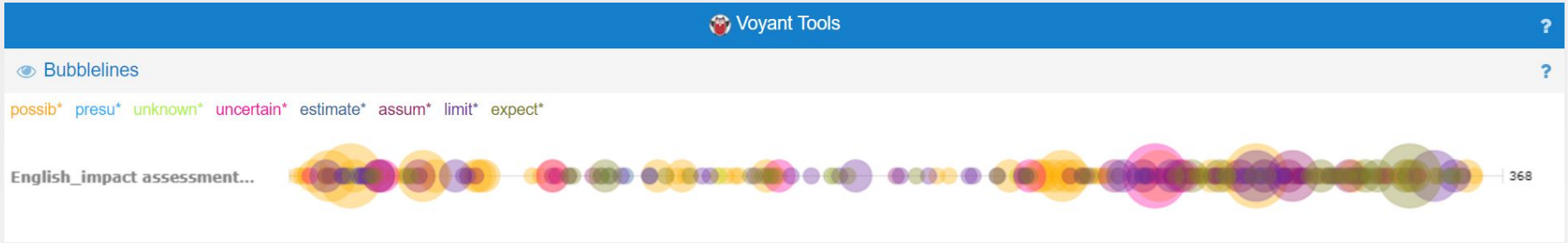

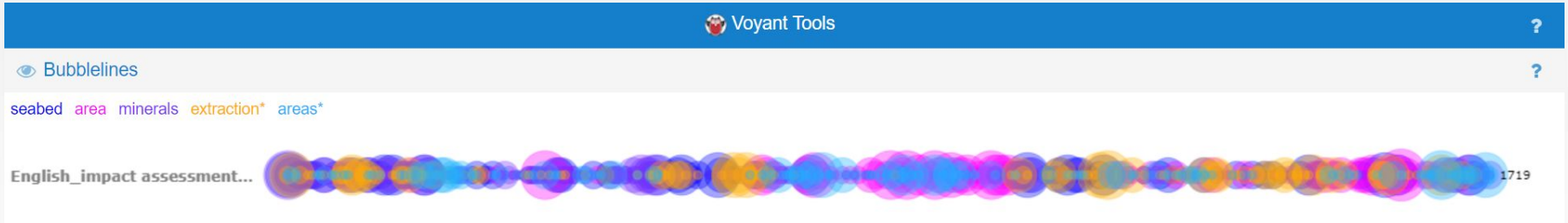

Formalizing certainty: table of impacts (snipet)

Impact	Environment	Impact level	Assessment
Physical removal of inactive sulphide deposits*	Benthic communities	Small	Impact of short duration due to rapid recovery back to the pre-condition of the benthic fauna. The affected area constitutes a small proportion of the seabed with an assumed corresponding soft-bottom fauna. Note that the impact level "small" applies if the fauna at inactive sources consists of soft-bottom fauna that does not differ from surrounding areas.

*The University of Bergen writes in its foundation report that the distinction between active and inactive deposits is not entirely clear and there are studies that indicate that unique fauna also occurs at inactive deposits.

Konsekvensutredning - undersøkelse og utvinning av havbunnsmineraler på norsk kontinentalsokkel, 2022, pp. 107.

Tension between uncertainty and certainty

Uncomfortable tension? How to release it?

Mitigation in the deep sea

avoid > minimize > remediate > offset

Van Dover, C. L., Ardron, J. A., Escobar, E., Gianni, M., Gjerde, K. M., Jaeckel, A., ... & Weaver, P. P. E. (2017). Biodiversity loss from deep-sea mining. *Nature Geoscience*, *10*(7), 464-465.

Results: mitigation

‘For most impacts, current knowledge indicates that in practical management it will be possible to take mitigating measures.’

Konsekvensutredning - undersøkelse og utvinning av havbunnsmineraler på norsk kontinentalsokkel, 2022, pp. 11.

Results: mitigation

‘Several of the proposed mitigating measures in the background report on effects on the environment indicate that important mitigating measures to reduce the environmental impact of mineral extraction at sea will be to incorporate environmental risk-reducing measures in technology development. Mitigation measures can help reduce environmental impacts, which in turn can contribute to achieving the sustainability goals.’

Konsekvensutredning - undersøkelse og utvinning av havbunnsmineraler på norsk kontinentalsokkel, 2022, pp. 22.

Results: mitigation

‘Resource bases and technological solutions for extraction, including possible relevant mitigating measures, are characterized by great uncertainty. Due to these uncertainties, the use of activity scenarios has not been found appropriate in the impact assessment.’

Konsekvensutredning - undersøkelse og utvinning av havbunnsmineraler på norsk kontinentalsokkel, 2022, pp. 31.

Results: mitigation

‘As technology for the extraction of seabed minerals is under development, proposed mitigation measures are of a generic nature.’

Konsekvensutredning - undersøkelse og utvinning av havbunnsmineraler på norsk kontinentalsokkel, 2022, pp. 109.

Mitigization of the opening process

Tension between various uncertainties and the need for certainty is dealt with through tension-releasing tool: *mitigization.*

Technical mitigation VS semantic *mitigization* – everything becomes a question of mitigation.

Mitigization of the opening process

Why are you giving us this new word at all?

Some conclusions (a recap)

- *Mitigization* is dealing with:
    - Uncertainties.
    - Impact assessment.
    - Opening process.
- Scientific input is used as a tool that is not informing the process but rather enabling predefined goals.
- What it means for science-policy interface?

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Thank you!

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