

Development of a decision matrix for coastal litter clean-ups in Norway



Why a decision matrix for clean-ups?



Clean-ups important to reduce the risk of litter in the environment



But costly and may represent a risk to ecosystems

Need tools to

- prioritize areas and items to clean
- to reduce potential harm of clean-ups to ecosystems

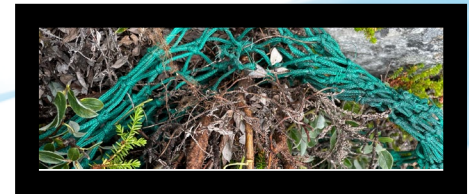
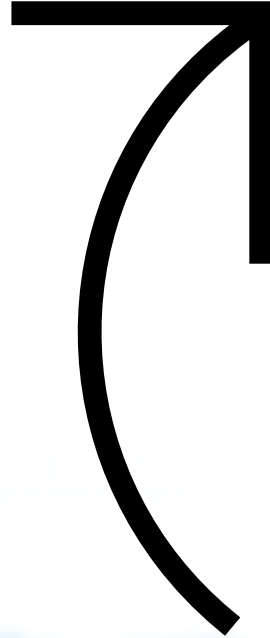
Explored potential for **map-based tool** guiding coastal clean-ups in Norway



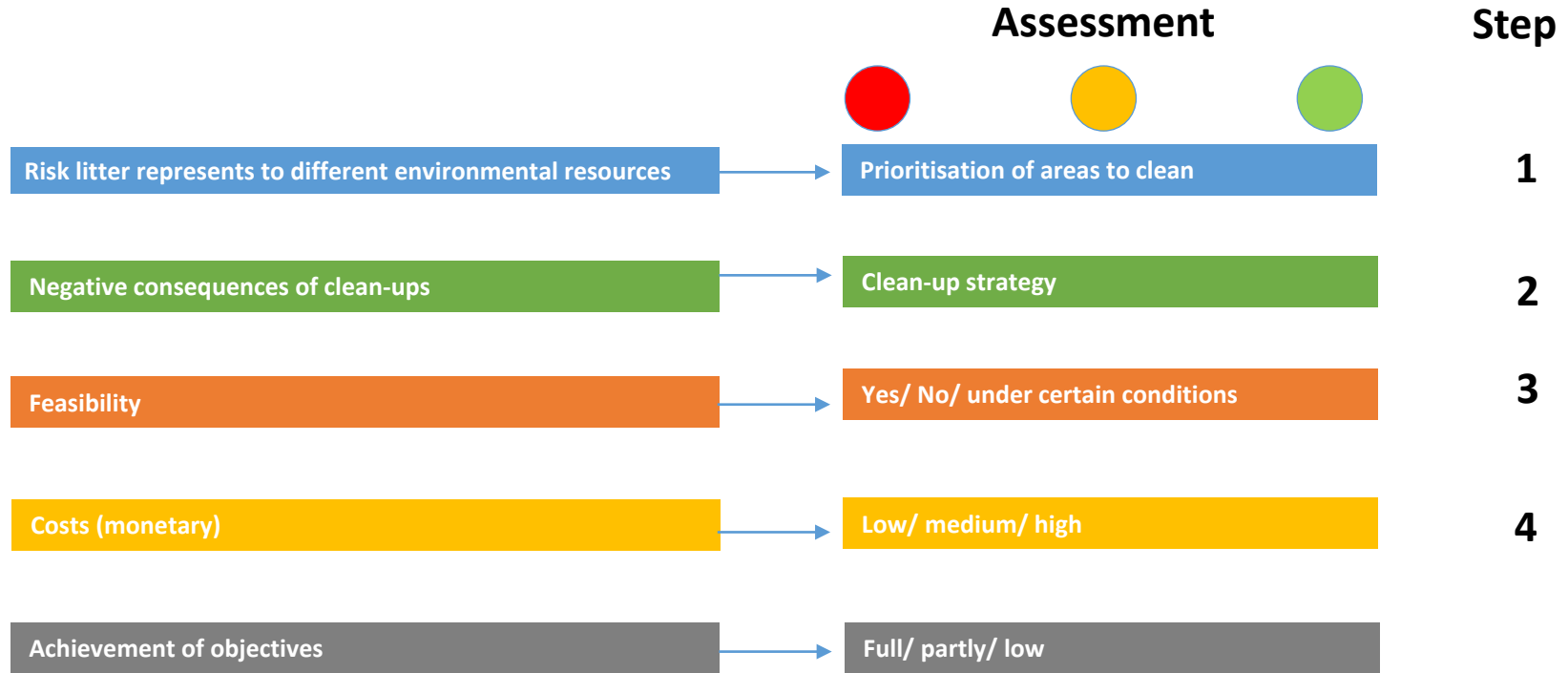
Who are the users?

Authorities or funding agencies for prioritizing areas to clean

Those doing clean-ups



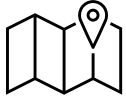
Evaluation elements



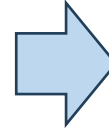
Risk litter represents to different environmental resources

Presence of

- Litter
- Environmental resources



Consequence
of interaction



Prioritisation of areas to clean



Data needs and status

Amount and type of litter



Environmental resources



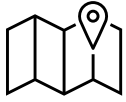
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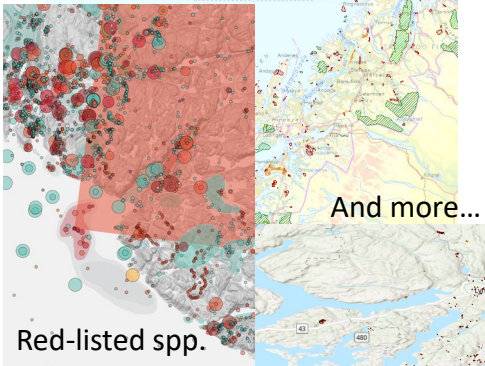
Citizen science:

- Few clean-up actions register data
- Large difference in spatial cover of data

Only 7 OSPAR beaches

Protected areas

And more...



Red-listed spp.

Nature types

Handtakets utgjøringsforhold	Handtakets utgjøringsforhold	Handtakets utgjøringsforhold	Handtakets utgjøringsforhold	Handtakets utgjøringsforhold	Handtakets utgjøringsforhold	Handtakets utgjøringsforhold	Handtakets utgjøringsforhold	Handtakets utgjøringsforhold	Handtakets utgjøringsforhold	Handtakets utgjøringsforhold	Handtakets utgjøringsforhold	Handtakets utgjøringsforhold	Handtakets utgjøringsforhold
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Some risk assessments conducted

Few of these relevant for litter items dominating in Norway

Not risk assessed for Norwegian shoreline organisms

Negative consequences of clean-ups

Prioritisation of areas to clean



Degree of infiltration

Exposure of microplastics



Clean-up strategy



Don't clean
Need for cost-
benefit analysis



Professional
clean-up only



Surface clean-up OK
No qualifications
needed

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Clean-up strategy



Don't clean
Need for cost-benefit analysis



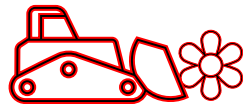
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Can we identify attributes that can predict areas where litter has a high degree of infiltration and degradation?

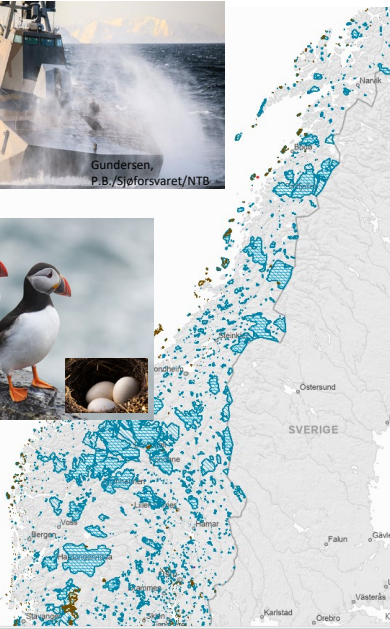
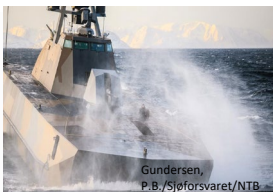


Guidelines based on cost-benefit analysis of local ecology, socio-economic factors, environmental cost of technology implementation, risk of technology failure etc

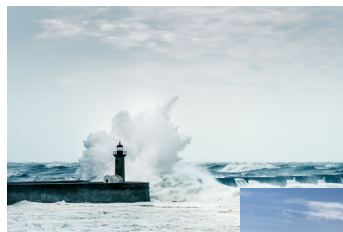


Feasibility

Restrictions



Practical and safety issues



Yes/ No/ under certain conditions



Accessible by road - unproblematic

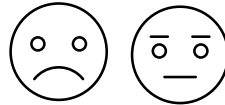
Clean-up before the birds arrive

Clean-up require calm waters

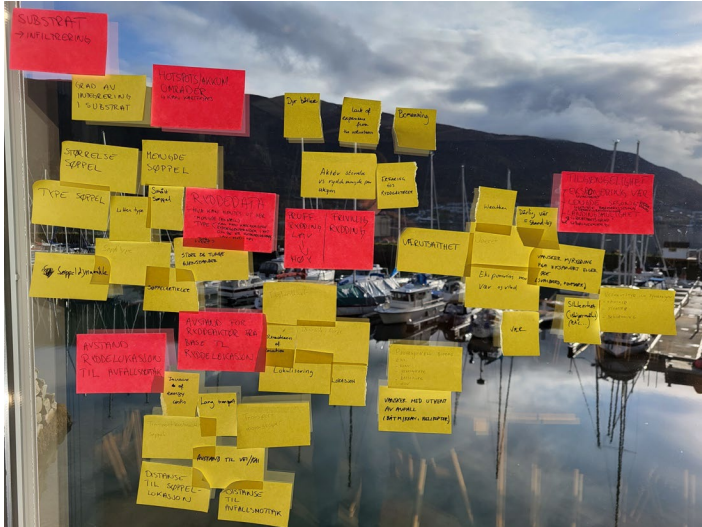
Military restricted area

Costs (monetary)

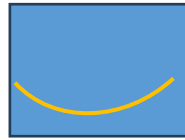
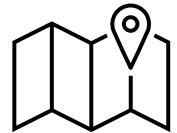
Low/ medium/ high



Factors driving clean-up costs



Infiltration in substate
Technology requirements



Small Large

Size of litter
Amount of litter



Distance to port/ waste management
Transportation need



Competence requirement
HMS

Future work

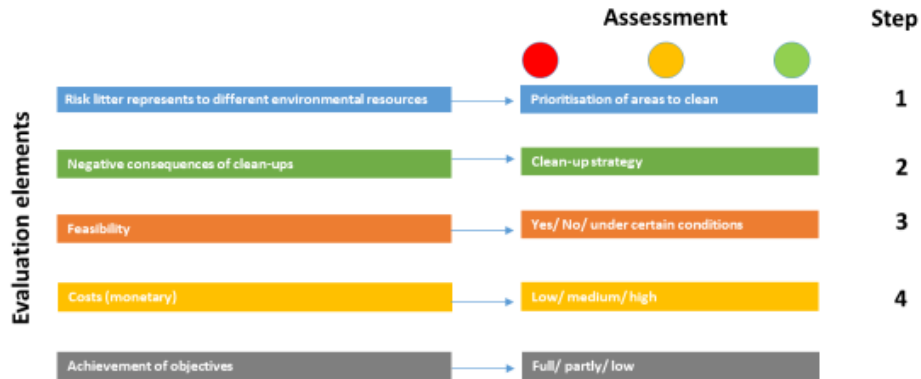
- Further identify attributes and values of these
- Expert opinion processes
- Test on three different cases with different properties
- Discuss the results with experts and users



Acknowledgement



Norwegian Retailers'
Environment Fund



Questions?
Comments?