PREVENTION

A regional perspective on preventive measures for marine litter

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Scenario

Regions have an "in between" role but cooperate across borders to help prevent litter ending up in our waters. What is needed for regional action plans to be successful as a preventive measure?

Context

- The Conference of Peripheral Maritime Regions (CPMR) brings together some 160 Regions from 25 States from the European Union and beyond.

- Representing about 200 million people, the CPMR also campaigns against marine litter.

- The North Sea Commission (NSC) is one of the six geographical commissions of the CPMR.

- The North Sea Commission's Marine Resources Group developed an action plan on marine litter

CPMR CRPM
Conference of Peripheral Maritime Regions

NORTH SEA COMMISSION

Action plan
marine litter

Stakeholders

🏛 Government

Fishing- and aquaculture companies

⚓ Ports

🎓 Education

🏪 SME's

Challenges

1 How can regions be more effective in prevention and reduction of marine litter?

2 What regional measures have the most influence on reducing marine litter?

3 What innovative ideas or business models should be developed?

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MAPPING AND QUANTIFICATION

Scenario

Current monitoring methods (e.g. ship-based monitoring, diving) are characterised by data gaps (time, location, quantity). Monitoring is expensive and sometimes not technically feasible. How is it possible to have a cost-effective inclusive monitoring approach for mapping marine litter?

Context

Systematic observations are necessary and must be based on an clear rationale which includes a strategy to extrapolate data to non-observed regions. A collaborative approach merging together data from different sources and cross validating it is needed.

- New technologies have been developed for filling data gaps, but with limitations.

- Satellite remote sensing can provide information for the whole ocean, but at a resolution that is not enough to identify individual debris.

- Drone based remote sensing can provide higher resolution data, but for restricted areas and not through the whole water column.

- Autonomous underwater vehicles (AUV) can monitor seabed up to deep regions, providing non-systematic data for the water column.

- Low-resolution models can combine from small scales to global, but high-resolution models are specifically local and really difficult to combine with global model solutions.

Stakeholders

- Government
- Research Community
- Citizens
- Fishermen/aquaculture farmers
- Tourist operators
- Tech industry (drones etc.)

Challenges

1 Which other monitoring schemes can be implemented that are more cost efficient?

2 What is the role of each stakeholder and how their joint effort could help to fulfil gaps?

3 Are there innovative solutions for integration of different monitoring methodology and are there business opportunities for it?
e.g. development of new sensors for plastic monitoring Drones, remote sensing...)

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RECOVERY

An extended producer responsibility scheme for end of life acquaculture and fishing gear

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Scenario

The government has decided to introduce an extended producer responsibility scheme for end of life fishing & aquaculture gear for better recovery and further end-of-life management.

Context
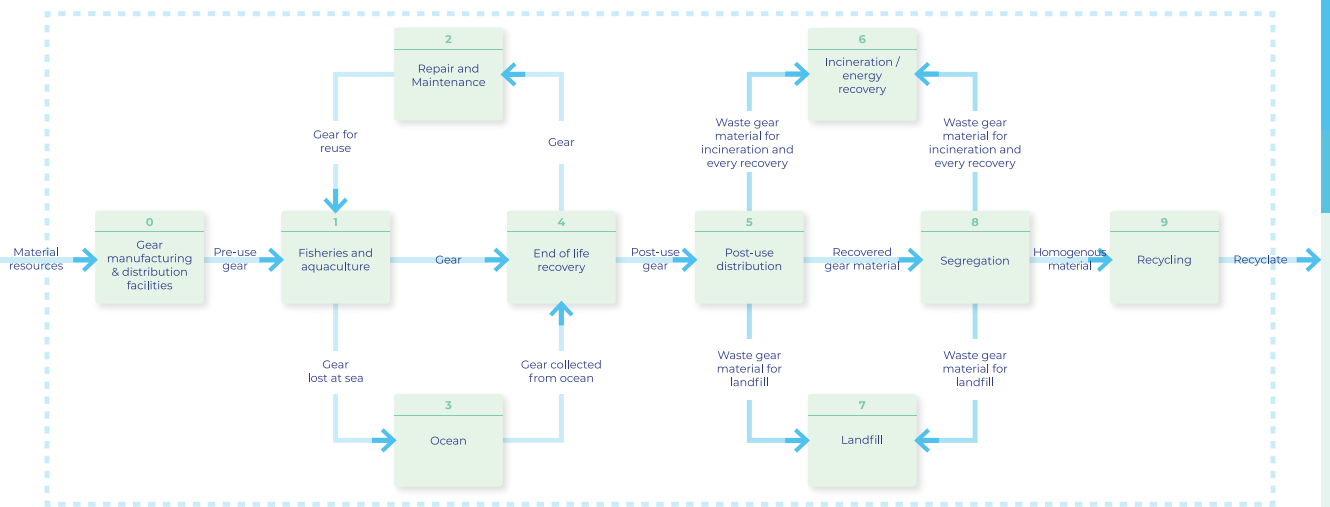
Stakeholders

- Gear producers
- Fishing- and aquaculture companies
- Ports
- Government
- Waste management and recyclers
- Distributors

Challenges

1 What is the necessary infrastructure and processes support such a recovery scheme and what role would stakeholders play in it?

2 How could such a scheme potentially affect each stakeholder?

3 Are there any business opportunities in such a scheme from the perspective of stakeholders?

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TRANSFORMATION

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## Innovative business models to transform recovered marine litter from fishery and aquaculture

Scenario

Now is 2020 and new circular economy directive has been adopted in the EU. This means that governments have agreed on investing both on payment schemes for fishermen & farmers, and on setting up recollection facilities at ports in order to collect the marine litter recovered. Transforming this waste should ideally create environmental, economic and social value.

Context

Various factors to be considered:

- demand and **costs** for recyclables,
- treatment **infrastructure** and equipment, personnel/capacity, transport and **energy use**, and
- potential **environmental impacts** of recycling.

- Marine litter is a **complicated waste stream**: the waste is mixed, degraded and subject to biofouling. Collected marine waste is often landfilled or incinerated. It is **challenging to clean** it so that it can be re-used.

- **China plastic waste import ban** provides an additional incentive for countries to enhance domestic recycling capacities and value chains.
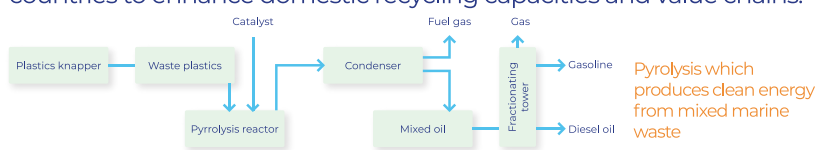
business opportunities for transformation of marine litter

Upcycling nets into regenerated nylon

Combining with other materials (such as concrete) to make lightweight construction materials

luxury products with select recycled marine plastic

Pyrolysis which produces clean energy from mixed marine waste

Stakeholders

- Government
- Waste management, Recycling and transformation companies
- Fishing -and aquaculture companies
- Ports
- Media
- NGOs

Challenges

1. What are the opportunities and challenges for transforming marine waste according to each stakeholder?

2. What are some innovative ideas or business models that can contribute to one of the three values (social, environmental and economic)?

3. What are the different indicators that may be used to decide what type of marine waste transformation has the least impacts on the environment (i.e. CO_2 footprint) and is the most cost efficient?

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