Tackling marine litter

Fishing and aquaculture gear

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resource futures

The marine litter problem

Fishing and aquaculture gear is a global problem when abandoned, lost, or discarded. As marine litter it is harming ecosystems and poses a threat to the marine environment.

Marine litter:

- traps, injures and kills millions of seabirds, marine mammals, and fish;
- entangles and damages fishing equipment and propellers, putting lives at risk;
- pollutes beaches;
- breaks into ever smaller fragments, risking ingestion and transmission of persistent organic pollutants (POPs);
- carries a significant risk of ingestion and transmission of persistent organic pollutants (POPs).
- contributes to the climate crisis, damaging the ocean's potential as a vibrant and biodiverse ecosystem critical in carbon storage.

A circular economy

Creating a circular economy for these products can prevent

marine litter and protect our finite resources.

Circular product design and improved management at end-of-life, facilitated by government support and effective policy levers, can offer a solution.

Resource Futures' work drives progress towards a more circular economy. We use economic impact assessment and cost-benefit analysis to compare policy options, and provide an evidence base for stakeholder consultation.

Managing our waste material

Managing waste fishing and aquaculture gear comes with significant challenges, including:

- Waste is large and difficult to handle;
- Waste often requires cleaning;
- There is limited space to store or manage waste;
- It is difficult to separate materials for recycling;
- As a result, most material sent to landfill, incineration, or not managed at all.

The world is taking notice

Attention from governments, media and the public in recent years has stimulated widespread support for action.

UK Governments are researching measures to manage waste gear, supported by research from Resource Futures. EU member states are also evaluating how to tackle the waste gear problem.

In the public domain, documentaries such as SeaSpiracy and Blue Planet II have gained significant traction in highlighting issues of marine litter and waste fishing and aquaculture gear.

The EU set out requirements for an Extended Producer Responsibility (EPR) scheme which requires EU member states to implement fishing and aquaculture gear EPR by 2025. States need to be reporting gear sold and waste tonnages by 2022 – for which there is currently no suitable data.

Until recently there was limited information on fishing and aquaculture gear. Resource Futures' work gathers the information and quantifies material flows, informing the development of policies tailored to the specific industries and waste of a region and enabling data-driven decision making.

> "Economies of scale in managing end-of-life fishing and aquaculture gear will encourage investment in infrastructure and behaviour change needed to effectively tackle the problem of marine waste."

Susan Evans, Policy Lead at Resource Futures

The current system is not working

Marine litter represents a failure in product and waste management. If all waste gear were managed responsibly, and reasons for accidental loss were addressed, almost none would be lost to the marine environment.

Waste gear can contain potentially valuable materials, but current product design and waste management systems make it difficult to recover these.

Circular economy practice will also reduce carbon emissions associated with manufacturing and waste management.

Time for a new approach

Several manufacturers, recyclers, and fishing and aquaculture industries are seeking to address the waste gear problem.

However, coordinated action is needed at scale, and governments can drive this change.

Achieving economies of scale in managing end-of-life fishing and aquaculture gear will encourage investment in infrastructure and behaviour change needed to effectively tackle the problem.

But more importantly, new schemes could catalyse circular economy thinking that designs out fishing and aquaculture gear waste and maximises the value of materials used, thus avoiding marine litter altogether.

Resource Futures' three-step approach can help understand the problem and identify the best solutions for government and industry.

Our three-step approach

Step One:
Understand the challenge (quantification)

Resource Futures is at the forefront of the effort to accurately quantify the marine litter challenge and inform good management decisions across the globe. A deeper understanding of the products and waste stream, and the size and scale of the problem is essential to evaluating appropriate solutions.

Step Two:
Use data to design effective policy solutions

Policy measures can be co-designed with government, the fishing and aquaculture industries, and their suppliers, to create a financially and environmentally sustainable waste management system. Considerations include import, export, and market competitiveness, as well as the nature of the products, supply chains, waste stream, and infrastructure challenges of waste management in remote locations.

Solutions do exist however, and results from pilot projects are encouraging.

Step Three:
Assess impact and analyse cost/benefit

We estimate the economic, environmental and social impacts of each policy option using the best available data. The uniquely rich data we develop in Step One allows granular assessment of how policies could impact different gear types and materials, down to the level of different plastic polymers.

Cost-benefit analysis allows different policies to be compared in terms of the scale of their impact and their value for money, and the impact assessment also highlights non-monetised impacts that cannot be quantified. The outputs allow policy makers to engage with industry in a more meaningful way and make informed decisions.

Our resources

Resource Futures provides a holistic view of opportunities to improve waste management and reduce marine litter, from waste management systems to eco-design, policy drivers and incentives. With specialised knowledge of fishing and waste practices and how they can vary between fisheries, vessels and harbours.

Gear profiles

- Full breakdown of gear type into components, material composition, weight and lifespans;
- Verified by gear manufacturers and industry experts;
- Tailored to different fisheries in each country.

Extensive networks

- Gear manufacturers, waste managers, and experts in gear design, materials and circular design.

Methodologies

- Providing much needed insight on the products used, waste created, and the pros and cons of different approaches in any geographical and political context.

Quantification

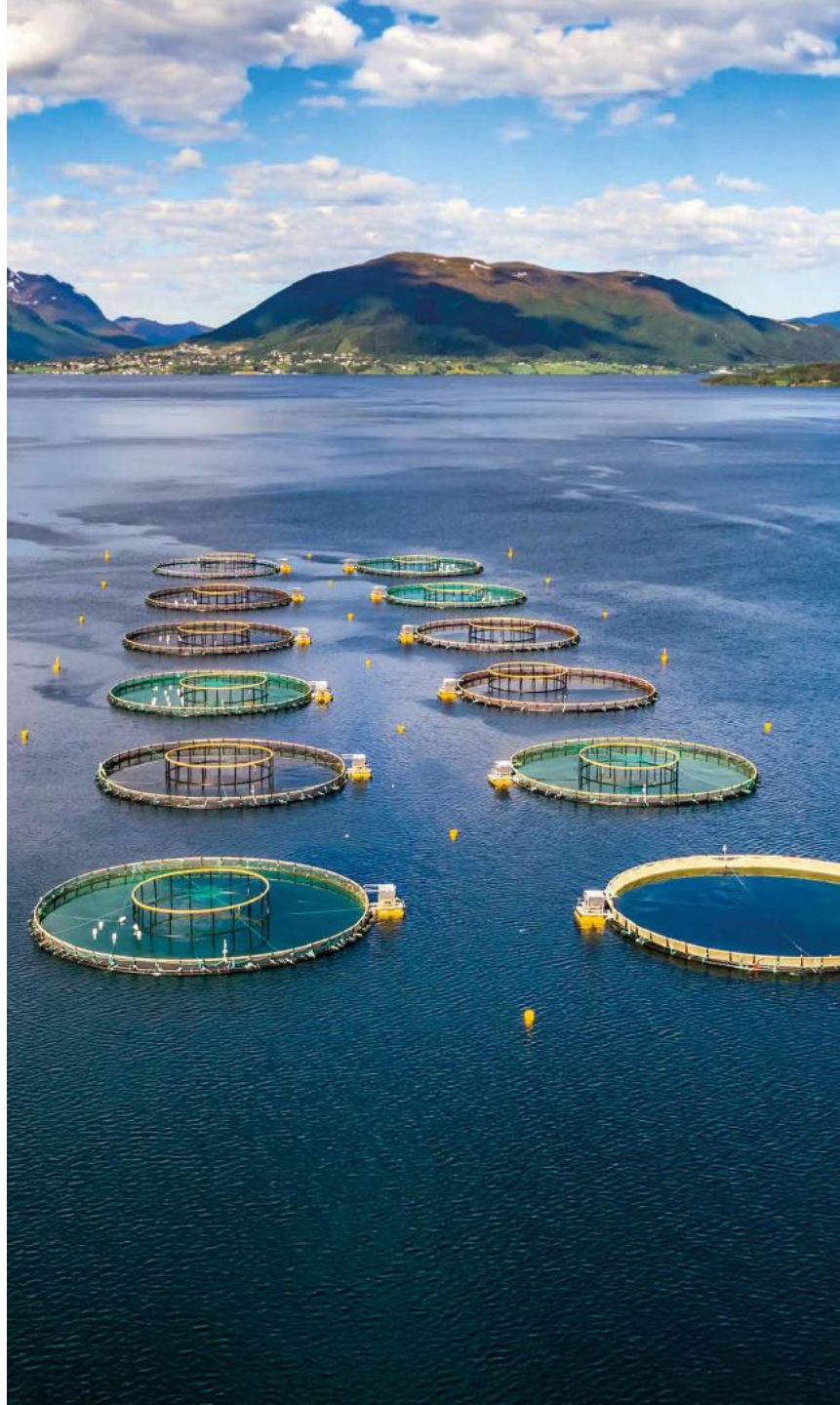
- Resource Futures provides national material estimates using the gear profiles and market data;
- Sub-national geographic breakdowns.

Engagement

- Ensuring a human-centred and participatory approach;
- Helping to unite industry and government in co-designing lasting solutions.

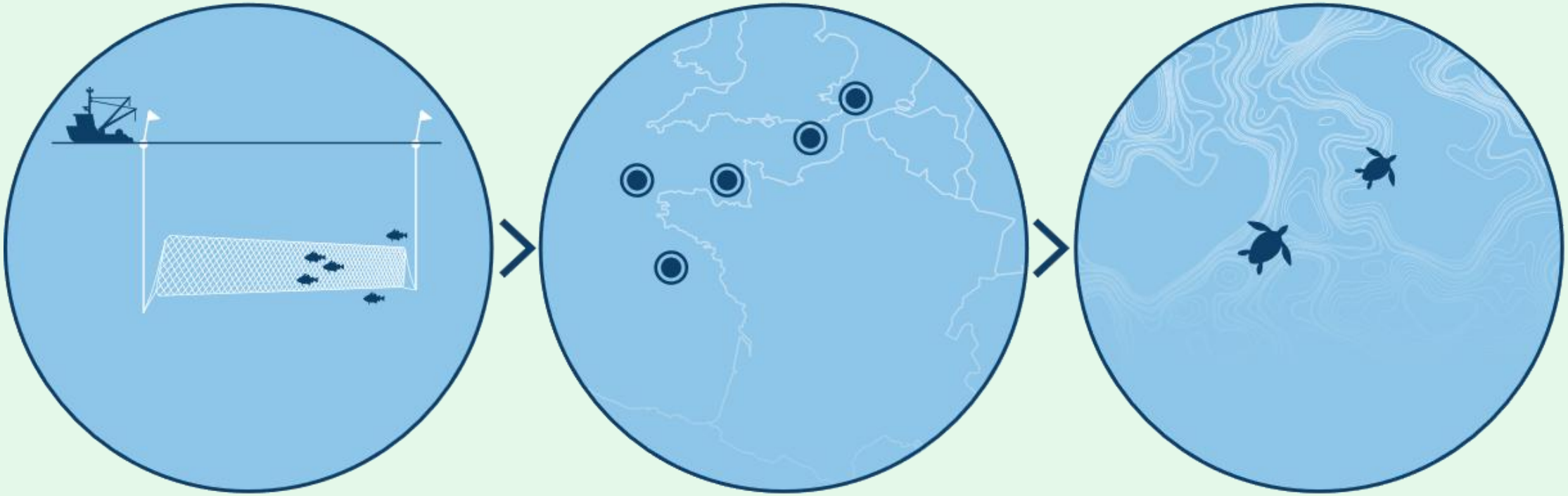
Impact assessment

- To compare different solutions;
- To provide an evidence base for industry engagement and public consultation.



Data-driven decision making

Governments and industry are looking for new solutions to better manage waste fishing and aquaculture gear. We have collected a huge quantity of data on fishing and aquaculture gear to understand the products, materials and waste arisings. Solutions are tailored to regional circumstances. We compare policy options to determine the biggest impact and best value and the resulting evidence is used to engage industry and other key stakeholders.



We work with manufacturers, fishers and aquaculture operators to understand each component of gear. Materials and weights of components are defined and profiles are created.

Profiles are combined with data on fishing vessels and aquaculture farms to provide national estimates of gear in use and waste produced. This informs services and strategy.

Data-driven feasibility and suitability assessment ensures the chosen solution is successful, leading to meaningful change to protect our marine environment.

Our expertise

Our work is helping to understand the size and the nature of waste fishing and aquaculture gear, to develop practical and cost-effective solutions, and bring together key stakeholders needed to support a successful system.

Case study

UK policy development

Resource Futures worked with the governments of England, Scotland, Wales and Northern Ireland to profile the fishing and aquaculture gear of local industries. Policy options were co-developed with government departments, critically analysed, and assessed using economic impact assessment and cost-benefit analysis. The outputs will inform government action and industry engagement, supporting a transition to a circular economy.

View case study

Case study

Focus on Scottish industries

Scotland has unique fishing and aquaculture industries, hosting many different types of fishing and farming methods. Resource Futures undertook several studies for the Scottish Government to understand gear use and waste management in greater detail, focusing on the large industries of aquaculture and creel pot fishers. This work provides a significant new evidence base and insight on potential solutions.

View case study

Get in touch

Resource Futures works in collaboration with policy makers around the world to deliver meaningful impacts.

Interested in our approach? Want to know more about how our resources could help inform your decision-making?

Contact

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