



Scalable full-cycle marine litter remediation in the Mediterranean: Robotic and participatory solutions

SeaClear2.0

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Co-design Activities for Tackling Marine Litter - Stakeholder Workshop in Smögen locality, Sotenäs Municipality, Sweden
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The SeaClear2.0 stakeholder workshops

Identifying site-specific issues and co-designing applicable solutions are essential steps in effectively tackling marine litter. As part of the SeaClear2.0 project, ISOTECH Ltd is implementing its DeCyDe-4 decision support method in a series of participatory workshops with stakeholders in eleven countries around Europe and the Mediterranean (including non-EU member countries) to map site-specific marine litter problems and co-design solutions.

The third workshop: Smögen, Sweden

The third workshop was held in Smögen, in the municipality of Sotenäs in Sweden, on 05 September 2025. Organised in collaboration with the SeaClear2.0 Associated Region partner Sotenäs Municipality's Marine Recycling Centre, the workshop convened 19 invited stakeholders representing public bodies, waste management, industry, and civil society.

Local Insights: Marine Litter Challenges in Sotenäs

Participants worked collaboratively to identify key challenges that Sotenäs is facing regarding marine litter. The following challenges were identified:

1. Limited funding and resources for the Marine Recycling Centre in Sotenäs: The Marine Recycling Centre is recognised as a best practice example in Sweden, however, it is currently struggling to continue its operation due to limited funding and resources. The Centre plays a pivotal role as the main hub where litter collected from seabed and beach clean-ups is delivered. If the Centre ceases to operate, there will be no designated facility to process the collected litter, creating a critical bottleneck that could halt ongoing clean-up activities.
2. Insufficient monitoring for litter source identification: An estimated 80% of marine litter in the area originates from the sea. There is a pressing need for systematic monitoring and data collection focused on identifying sources of marine litter. Understanding where litter comes from is essential to designing effective measures, policies, and targeted prevention strategies.
3. Fragmented and inconsistent implementation of Extended Producer Responsibility (EPR): Participants highlighted the need for clearer and more harmonised EPR rules across countries. At present, each country applies different standards and procedures. Moreover, the outcomes reported by producers under EPR schemes are not always independently monitored or validated. Without transparent verification, there is a significant risk of greenwashing.
4. Funding gap between innovation and implementation - the “valley of death”: While Sweden offers substantial funding for research and innovation, there is a notable lack

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of follow-up support for implementation. As a result, many promising innovations remain untested or unused in real-world conditions, a situation often described as the “valley of death.” The same challenge exists at EU level. Participants emphasised the need for dedicated funding to scale up and implement practical solutions for tackling marine litter, beyond the innovation phase.

5. Accumulation of historical marine waste: In several coastal areas, fishing gear and other waste have been stored or abandoned for decades, even in backyards. These “historical stocks” of marine waste remain unaddressed. Participants stressed the importance of mapping these accumulations to estimate their volume and location, enabling targeted clean-up campaigns and proper disposal planning.
6. Lack of structured collaboration among stakeholders: Effective cooperation among NGOs, local authorities, academia, industry, and the fishing community remains limited. Participants underlined that genuine, ongoing collaboration across these groups is vital for sustainable and coordinated marine litter management.
7. Unclear allocation of responsibilities: Although Sweden and the EU have established quantitative targets, such as plastic waste reduction by 2030, there is often no clear allocation of responsibility for implementation and monitoring. Stakeholders called for each target to be accompanied by an action plan specifying who is responsible, how progress will be tracked, and how funding can be accessed.
8. Economic imbalance between virgin and recycled materials: Recycled or circular products are significantly more expensive than virgin plastics. This cost disparity discourages both industries and consumers from adopting circular materials, creating a major barrier to closing the plastic loop.
9. Insufficient emphasis on prevention: Participants agreed that current policy and practice focus too heavily on recycling rather than prevention. Preventing plastic pollution at the source should be prioritised, supported by awareness-raising, behavioural change, and upstream measures.

Two additional, transversal challenges were identified by the stakeholders: financial resources and awareness-raising. Stakeholders highlighted that while awareness of environmental issues and marine plastic pollution in Sweden is high, what is missing is awareness and understanding of existing solutions to address these challenges. This could be achieved through the promotion of best practices that are transferable to Sweden.

The workshop participants prioritised two important challenges for deeper discussion and the identification of solutions:

- (1) the limited funding and resources of the Marine Recycling Centre; and
- (2) the accumulation of historical marine waste.

Solutions to Address the Limited Funding and Resources of the Marine

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Recycling Centre

Participants recognised the Marine Recycling Centre in Sotenäs as a critical facility for effective marine litter management, serving as a model for circularity and local engagement. However, its long-term viability is threatened by the lack of stable funding and limited operational resources. To address these issues, stakeholders proposed the following measures:

- **Diversified and sustainable funding through EPR and customer involvement:** Producers and consumers should be integrated into the funding system for the Centre through Extended Producer Responsibility (EPR) schemes and voluntary contribution models. This would ensure that those who place materials on the market share responsibility for managing their end-of-life impacts.
- **Establishment of an award or recognition system:** Creating a national or regional award system could highlight and reward companies, municipalities, and citizens who actively support or collaborate with the Centre. Recognition could incentivise broader participation and reinforce public awareness of the Centre's importance.
- **Strengthened marketing and communication strategy:** The Centre should implement a clear marketing policy to increase visibility, attract new partners, and raise public awareness about its role and achievements. Strategic communication could help mobilise sponsorships, partnerships, and citizen contributions.
- **Investment in technology improvement:** Modernising sorting, processing, and recycling technologies at the Centre would enhance efficiency and cost-effectiveness, increasing its attractiveness to funders and expanding its capacity to handle collected marine litter.

Solutions to Address the Accumulation of Historical Marine Waste

The second major challenge discussed concerned the long-standing problem of historical marine waste, including abandoned fishing gear and legacy litter accumulated in coastal and port areas. Participants stressed that this issue requires coordinated action and systematic planning. The following solutions were proposed:

- **National and regional coordination and clear allocation of responsibilities:** A structured governance mechanism should be established to define roles, responsibilities, and coordination between national, regional, and local authorities. This would ensure coherent action and avoid duplication of efforts.
- **Identification and mapping of marine litter hotspots:** A systematic approach is needed to locate and quantify accumulations of historical waste, including in ports, beaches, and backyards. Mapping would enable targeted clean-up campaigns and efficient resource allocation.
- **Systematic and continuous funding:** Dedicated funding streams should be made available for historical waste removal, including long-term maintenance and follow-

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up actions. Reliance solely on short-term or project-based funding limits the continuity of such efforts.

- **“Name and shame” approach for accountability:** Publicly identifying entities or sectors responsible for the improper storage or abandonment of fishing gear and other waste could act as a deterrent and increase compliance with proper waste management practices.

Conclusions

The Sotenäs workshop underscored the central role of local initiatives, such as the Marine Recycling Centre, in ensuring the continuity and effectiveness of marine litter management efforts in coastal communities. Participants highlighted that even well-established best practices can be jeopardised by insufficient and unstable funding, fragmented responsibilities, and a lack of systemic coordination. At the same time, the issue of historical marine waste remains largely unaddressed, despite its significant environmental and aesthetic impacts.

Overall, the Sotenäs workshop demonstrated that while strong local practices exist, systemic support, through harmonised policies, coordinated governance, and continuous funding, is necessary to sustain and scale up these efforts. The insights and recommendations gathered will inform the ongoing SeaClear2.0 policy analysis and contribute to the development of the project’s forthcoming White Paper, ensuring that the Swedish experience helps shape robust and effective strategies for addressing marine litter across Europe and the Mediterranean.

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