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

SeaClear2.0

https://www.seaclear2.eu

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Stakeholder Workshop in Poti, Georgia
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The SeaClear2.0 stakeholder workshops

The SeaClear2.0 project takes a site-specific approach to developing solutions for preventing and mitigating the impacts of marine litter. This is done through the implementation of stakeholder workshops across the project's demonstration sites, pilot sites, and sites where SeaClear2.0 Associated Region projects have been funded. SeaClear2.0 partner ISOTECH is using its DeCyDe-4 decision support methodology to implement workshops with stakeholders in these 11 countries to identify site-specific marine litter problems, prioritise challenges, and co-design feasible interventions that reflect the local context.

The tenth workshop: Poti, Georgia

On 15 October 2026, the tenth stakeholder workshop took place in Poti, Georgia, which is the site of one of the five Associated Region projects funded by SeaClear2.0. The workshop brought together 21 participants representing mainly several departments and services within Poti Municipality, specifically the Sustainable Development and Innovation Service, the Infrastructure Service, the Architecture Service, the Municipality's waste management services, the Municipality's Sports and Tourism Centres, and representatives from the city council. Other public bodies represented at the workshop were the Agency of Protected Areas and the United Water Supply Company of Georgia. Further participants included a representative of the civil society organisation 'Georgian Environmental and Sustainable Development Group', a representative of the Hydrometeorology Institute of the Georgian Technical University, and a representative of the environmental services company ENSECO. The stakeholders discussed the issue of marine litter in the wider Poti area, within the overall context of waste and wastewater management challenges in Georgia. Due to the nature of the participants, both the problems and the identified solutions focused on Poti Municipality's jurisdiction, capacities and realm of influence. As a result, the identified solutions are specific to what Poti Municipality can effectively do to stop litter from making its way into the marine environment.

Local Insights: Marine Litter Challenges in Poti

Participants worked together to identify the main problems driving marine litter in Poti. Their contributions highlighted the fragmented and often lacking policies and infrastructure regarding waste management and its effects on Poti Municipality and its residents. A prioritised list of gaps and needs, from most to least pressing, follows:

1. Insufficient wastewater management infrastructure: The stakeholders identified the lack of sufficient wastewater infrastructure as the city's main gap regarding marine litter. This results in municipal wastewater flowing into the Rioni River and consequently into the Black Sea.
2. Lack of resources for wastewater treatment: This is closely related to the previous gap,

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and concerns the fact that Poti Municipality lacks the human and technical resources that are necessary for better managing the wastewater emerging from the area.

3. Lack of financial resources for the management of waste: The participants noted that the Municipality's financial resources for waste management are very limited, which in turn limits the actions that can be taken.
4. Challenges regarding waste management: Solid waste being produced within Poti Municipality, and in most of Georgia, is sent to landfill as mixed waste. While the Georgian National Waste Management Strategy 2016-2030 aims to establish separate collection and treatment of various waste streams, including municipal waste and biodegradable waste,[1] these regulations are not yet adequately implemented. A study funded by the World Bank found that the average density of plastics in the Rioni River is 1.77 items per square metre[2].
5. Lack of regulations and laws regarding marine litter: Currently, Georgia lacks regulations and subsequent actions to specifically address the issue of marine litter. The participants noted that since there are no specific policies in place, the issue is not prioritised.
6. Low awareness regarding marine litter among the public: Participants acknowledged that the public is not aware of the issue of marine litter, including its connection to land activities and its impacts on the environment and humans.
7. Lack of innovation and smart infrastructure that would help with the management of waste.

Three gaps/needs were particularly pressing for addressing marine litter in Poti according to the workshop participants: the lack of wastewater management infrastructure, the lack of human and technical resources for wastewater treatment, and the lack of financial resources for waste management. For the identification of applicable and effective solutions, these were separated into two distinct gaps/needs: (1) the lack of wastewater infrastructure and (2) the lack of human, technical and financial resources for waste management.

Addressing the Lack of Wastewater Infrastructure

Stakeholders proposed the following solutions for addressing the lack of wastewater infrastructure:

- Filling infrastructure gaps: Poti Municipality has placed barriers for the collection of plastic waste flowing from the Rioni River towards the sea. However, the Municipality lacks the necessary infrastructure, such as small vessels, for picking up the collected plastics and transferring them to landfill (as there is no alternative waste management

[1] https://www.rec-caucasus.org/new/national-waste-management-strategy-2016-2030-and-action-plan-2022-2026-presented-to-stakeholders
[2] https://mepa.gov.ge/En/News/Details/24270

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option). Filling these infrastructure gaps was considered a priority.

- Creation of a department within the Municipality's services to deal with marine litter: this department would work exclusively on identifying solutions for preventing and managing marine litter.
- Training for municipality staff: especially regarding marine litter, how this relates to wastewater treatment, and how to manage it.
- Allocating financial resources from within the Municipality's budget for dealing with waste that stems from improper wastewater management.

Addressing the Lack of Human, Technical and Financial Resources for Waste Management

A similar set of solutions as for wastewater management were identified for this gap:

- Allocating financial resources: The participants noted that Poti Municipality should prioritise waste management and allocate the necessary resources to more effectively collect and treat waste.
- Creation of a waste management department: At the moment, there is no specific department within the Municipality that is responsible for waste management. Its establishment would help prioritise this issue and work towards effective management solutions.
- Provision of training: to create a group of waste management specialists within the municipality that would be able to transfer good practices to Poti.
- Raising awareness among citizens: the stakeholders noted that educating and raising awareness among the Municipality's residents is important to support all other actions and established infrastructure. Importantly, they also noted that the Municipality does not have personnel dedicated to awareness-raising activities, and this should also be addressed.

Conclusion

The tenth SeaClear2.0 stakeholder workshop in Poti highlighted the close links between wastewater management, solid waste management and marine litter, highlighting the need to address land-based sources of pollution to protect the Black Sea. Overall, the workshop demonstrated that meaningful progress in tackling marine litter in Poti requires a coordinated, municipality-led approach that combines practical infrastructure improvements with stronger institutional capacity, adequate funding and public engagement. While these local interventions cannot replace the need for wider improvements in wastewater treatment infrastructure and national policy, they represent actionable steps that Poti Municipality can take to reduce the amount of litter reaching the Black Sea and strengthen local marine litter prevention and management.

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