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Themes: Plastic Pollution and Marine Litter
Title: "Litter accumulation and beach clean-ups techniques used along the French coastline"

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Abstract

As part of the Interreg project CleanAtlantic, Cedre with the support of Data Terra, launched in 2020 an online survey on macro-litter on the coastline of France, with a three-fold objective: to (i) diagnose beach litter pollution and identify main accumulation sites; (ii) identify measures in place to reduce stranded litter and (iii) review clean-up operations.

This survey contributes to public policy actions relating to marine litter: (i) French national roadmap against marine litter ("Zéro déchet plastique en mer", action 19) conducted by the French Ministry for the Ecological Transition, and (ii) OSPAR Regional Action Plan for Marine Litter 2014-2020 (actions 55 and 56).

The survey lasted one month and was circulated to over 400 French stakeholders. It targeted the stakeholders involved in implementing and financing clean-up, namely: local authorities, primarily municipalities; marine protected areas; certain public institutions; and associations and cooperatives specialised in marine litter. The questionnaire was geared towards local granularity, and therefore targeted local stakeholders liable to have very good field knowledge.

With only 105 usable responses out of the 303 received, the survey obtained a limited number of responses. However, responses show a relatively even spatial coverage of mainland France coastline and provide a good understanding of the local beach litter situation. Respondents were mainly coastal municipalities and non-governmental associations. However, in relation to the total number of coastal municipalities, municipalities' participation rates appear to be extremely low. The main roles played in the field of beach clean-up by the respondent organisations are, in more or less equal proportions, awareness-raising (influence of associations) and conducting clean-ups.

Diagnosis of beach litter pollution and identification of accumulation sites

Reponses indicate that three quarters of respondents consider their coastal area to be at least moderately affected by marine litter and almost half consider it to be strongly affected. Regarding perceived impacts, the ecological impact is the main harmful effect mentioned, followed by the negative image.

Most litter strandings appear to occur in winter. However, there are very marked differences in seasonality between the Mediterranean coastline and the Channel-Atlantic coastline, which can be explained by different meteorological conditions and touristic activities.

According to the respondents, the main sectors of activity that generate coastal litter are fishing, followed by aquaculture and tourism. This is followed by mass-market retail and shipping, then by groups with a similar rate of incidence: pleasure boating, wastewater treatment, industry and ports.

Though the sea is identified as the main pathway of entry for litter washed up on the coast, addition of the different pathways mentioned by respondents indicates the majority of inputs originates from land-based sources.

The survey identified a total of 207 key litter accumulation sites along the entire coastline. It is estimated that about half of these sites receive more than 10 m^3/year and can be considered to be marine litter hotspots.

Identification of measures in place to reduce stranded litter

Incentive schemes to reduce beach litter appear to be increasingly common with the two-fold aim to encourage people not to dump litter or reduce inputs and to pick up beach litter. These incentives are usually implemented at the initiative of municipalities, on or near the shore.

On the other hand, the implementation of protective equipment to reduce litter washing ashore is not often mentioned by respondents. So far, it appears that very few municipalities have set up such devices; however the trend seems to be on the rise.

Concerning accreditation programmes promoting the reduction of stranded marine litter, various accreditation initiatives of varying scope, ranging from simple projects to more demanding certification programmes, appear to be implemented.

Identification of beach clean-up techniques and costs

Survey results indicate that environmental sensitivity is the number one key point when doing beach clean-up. In second place comes the organisation of clean-up, which is of course crucial for all structures, whether public or voluntary, and which must also include the necessary local coordination of clean-up operations.

The cost does not appear to be identified among the most determining factors; this score should however be adjusted given the prevalence of volunteer associations among the respondents and, conversely, the low proportion of funders, particularly municipalities.

To the question "are environmental issues taken into account", the answer is almost unanimously yes.

Regarding the type of cleaning used, manual collection is by far the preferred option in the survey results (probably also amplified by the strong participation of the voluntary sector). Mechanical collection is nevertheless common in certain areas, notably large dune areas and tourist beaches, whether in urbanised areas or not. While all stakeholders involved in cleaning implement manual collection, this is not the case for mechanical cleaning, which is only organised by local authorities: municipalities or departments (larger administrative divisions).

The main operators involved in cleaning are of course the municipalities, which are responsible for beach cleanliness. The workforce and equipment involved appear to come from various sources depending on who is organising clean-up operations. Regarding machinery, the few answers provided indicate that the most commonly used type of mechanical equipment is, unsurprisingly, beach cleaners; however, rakes are also relatively common.

Unsurprisingly, the frequency of cleaning varies according to the season: monthly cleaning is the most common (for all types of cleaning), especially in winter. Cleaning efforts begin in the spring and continue through to the autumn, during which daily and weekly cleanings take precedence over monthly cleaning, while in summer daily cleaning reaches its highest level.

Municipalities, as the bodies responsible for keeping beaches clean, are naturally the structures that contribute financially the most to beach cleaning (including for management of the recovered waste).

Overall, it appears that clean-up practices and the overall organisation (operators and funders) appear to vary considerably along the coastline according to various parameters: volumes of stranded litter, local environmental characteristics (ecological and economic), coastal population density, site accessibility (in terms of remoteness, number of access points and hazardousness). Clean-up costs also vary according to the effort required and agreed on a seasonal basis according to ecological considerations (sensitivity) and economic factors (tourism).