



MARLISCO Marine Litter Forum in Ireland



Beaufort (c/o CMRC), Environmental Research Institute, University College Cork, Ireland

Kathrin Kopke¹, Ashley Bennison¹ and Tom Doyle^{1&2},

¹Beaufort c/o Coastal and Marine Research Centre (CMRC), Environmental Research Institute, University College Cork, Ireland

²School of Natural Sciences, Ryan Institute, National University of Ireland Galway, Galway, Ireland







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Introduction

MARLISCO - MARine Litter in European Seas: Social AwarenesS and CO-Responsibility

MARLISCO is a European project funded from the European Union's Seventh Framework Programme (FP-7) for research, technological development and demonstration under grant agreement no [289042]. Marine Litter is globally recognised as an emerging threat to the environment, human health and safety, as well as livelihoods and MARLISCO's goal is to raise public awareness, facilitate dialogue and promote co-responsibility among the different actors towards a joint vision for the sustainable management of marine litter across all European seas.

The Consortium is made up of 20 partners from 15 European countries across Europe's four regional seas (Figure 1). The partners represent Industry, Research, Education and NGOs. The project commenced in June 2012 and will finish in May 2015.



Figure 1: Map indicating the distribution of the MARLISCO Project Partners (in dark blue).

MARLISCO has four overarching objectives:

- To increase awareness of the consequences of societal behaviour in relation to waste production and management on marine socio-ecological systems;
- To promote co-responsibility among the different actors;
- To define a more sustainable collective vision; and
- To facilitate grounds for concerted actions.

These objectives are being met through activities and events organised over the duration of the project. One of the MARLISCO project's main activities is the organisation and running of a series of 12 Marine Litter fora across Europe between April 2014 and April 2015.

MARLISCO Marine Litter Fora

The MARLISCO fora aim to raise awareness of the marine litter issue and potential long term solutions by achieving the following objectives:

• To provide participants and stakeholders with the necessary scientific information in an accessible format so that both the scale of the marine litter issue and the difficulties in providing long-term solutions given varying levels of public perception of the problem and







the technical, economic and waste management policy constraints on industry can be appreciated.

- To afford the opportunity for stakeholders to become more informed on the issues associated with marine litter and its impacts at the national and regional sea level, and
- To provide an opportunity for stakeholders to participate in debate and actively contribute to providing viable solutions to this serious societal problem.

Building upon a process initially developed for the MARGOV fora (Vasconcelos and Caser 2012); UCC developed a common fora format to be used across Europe (Kopke and Doyle, 2014; Kopke et al., 2015). The format includes a number of aspects e.g. using a consensus approach, which is linked to higher quality decisions and greater satisfaction within a group and, in turn, better acceptance of group decisions (De Dreu CW and West 2001, Yang 2010) and limits the number of fora teams working together to a maximum of five to keep the dialogue effective, as smaller teams are associated with higher performance and shorter decision making durations (Katzenbach and Smith 1993),. The MARLISCO fora format was trialled and subsequently implemented in Ireland before being adopted in the subsequent events across Europe (Kopke and Doyle, 2014; Kopke et al., 2015).

The outcomes of the individual fora provide informed views about how to address Marine Litter issues in participating countries. Furthermore, the individual forum outputs are feeding into a summary document, which can provide a snapshot of informed stakeholder opinion on Marine Litter across Europe to the European Commission (Kopke et al., 2015).

The Marine Litter Forum in Ireland

On the 2nd of April 2014, Beaufort c/o CMRC (University College Cork) hosted the first of 12 European MARLISCO Marine Litter Fora in the Morrison Hotel, Dublin, Ireland. The event was facilitated by Sean Moncrieff (professional journalist with Newstalk Radio) with a live audience of 40 participants and a virtual audience of 12 registered satellite groups (maximum 5 participants per virtual group) who not only viewed the event but interacted via live webcast (see Figure 2). The two types of team (venue and satellite were limited to five participants





Figure 2: Schema indicating Forum Concept for interaction with live audience, satellite groups and panel of experts.







The Forum Participants

The Panel of Experts

Together with Sean Moncrieff, a panel of experts consisting of Jim Armstrong (Plastics Recyclers Europe), Prof. Richard Thompson (World Expert on Marine Litter, Plymouth University), Patrick Chan (Environmental Protection Agency, Ireland) and Annabel FitzGerald (An Taisce's Coastal Programmes Manager), shaped forum discussion through their complementary expertise.



The expert panel at the Marine Litter Forum in Ireland from left to right: Jim Armstrong, Prof. Richard Thompson, Patrick Chan and Annabel FitzGerald.

The Live Audience

Marine Litter is a cross sectoral issue and engaging forum participants, which represent a wide range of sectors (see Figure 3), provided not only an opportunity to utilise sector specific knowhow during the event but allowed mutual learning between the forum organisers and participants in the planning stages and run up to the event. The live audience consisted of 40 invited delegates from 34 organisations (see Table 1), which represent 13 Sectors of activity as shown below (Figure 2).



Figure 3: Distribution of live audience participants by sector of activity.







Table 1: Summary of represented organisations by sector of activity for the live audience

Sector	Organisations
	Galway-Mayo Institute of Technology
	Irish Science Teachers' Association
Research & Education	Coastal and Marine Research Centre (UCC)
	Irish Ferries
	Dublin Port Company
	Bord lascaigh Mhara
	Marine Harvest
Maritime Activities	Irish Coast Guard
	The Body Shop
	Food and Drink Industry Ireland
Retail	Alcohol Beverage Federation of Ireland
	Fáilte Ireland
	Irish Sailing Association
	Sea Angling Ireland
	Dun Laoghaire Marina
Tourism & Recreation	Northern Ireland Tourist Board
	Shabra Plastics / Recycling Ltd
	Cherry Plastics
Plastic Industry	Plastics Ireland
	Environmental Protection Agency
	Teagasc
Government Agency	DOENI Marine Division
	Fingal County Council
Local Authorities	Wicklow County Council
Waste management	Repak







	Irish Business Against Litter
	Arklow Waste Disposal
Psychology	University College Cork
	Keep Northern Ireland Beautiful
NGO	Coastwatch Ireland
Consultancy	RPS Group
Media & Communications	Irish Times
Marketing	Millward Brown

The Satellite Groups

Satellite groups from around Ireland joined the event via live webcast, such as teams representing the Cork Institute of Technology, Cobh Tidy Towns (Cork), Dingle Oceanworld Aquarium, Galway Atlantaquaria, Galway-Mayo Institute of Technology, Green Divers (Dublin), Strandhill Coastcare (Sligo), Conservation Volunteers Galway, Arklow Coastcare (Wicklow), Banna Beach Coastcare (Kerry), Portmarnock Clean Coast (Dublin), Irish Surfers Against Sewage (Donegal), Derrynane Marine Education Centre (Kerry) and the Department of Environment Northern Ireland (Belfast) and Foyle Followers (Derry).



Photo sent by The Foyle Followers Satellite Group: David Friel, (Donegal Co Council), Richard Gillen (Limavady Council) Gillian Simpson, (Loughs Agency), Trish Murphy (Celebrate Water) and William McElhinney (Celebrate Water).



Photo sent by Banna Coastcare Satellite Group: David McCormick (Ecologist, Tralee Bay Wetlands), Rachel Boyle (Banna Coastcare Coordinator), Peter Green (Celtic Horizons Publishing and Maharees Coastcare) and Cllr Gillian Wharton Slattery (Kerry County Council)







The Forum Process

The expert panel led a lively discussion, which was stimulated with the premier of **the Sources and Impacts of Marine Litter**, an animation by Jane Lee, developed in collaboration with the MARLISCO project partners. The short film has since been made available online <u>https://www.youtube.com/watch?v=017bBeXhYz4</u>, with 8400 views to date on youtube and is receiving great interest not only in Ireland but internationally.



Discussion about marine litter highlighted its multiple sources, types of litter and the impacts. Informed dialogue about micro plastics, plastic pieces or fibres measuring less than 5 mm, emphasised that many of these enter our environment already from home as fibres from laundry wastewater or plastic pellets used in industry or are found in personal care products, which led participants to consider the link between sources of marine litter and human behaviours.

Working in Teams and Voting as Individuals

Midway through the event the live audience and satellite groups were asked to work within their teams and use their expertise to come up with one specific action per group on how society might reduce marine litter. 13 ideas were captured and participants voted as individual on which 'action' they thought was the most effective and which most implementable at reducing marine litter in Ireland. Each participant could submit 1st, 2nd and 3rd preference votes for both the most effective and the most implementable actions.



The Forum concluded with the screening of the winning video from the Irish MARLISCO video competition for transition year students. The film **Fish For Thought** produced by a team of transition year students from Coláiste Dún Iascaigh, Cahir, Co. Tipperary used animation and humour to communicate Marine Litter issues see (https://www.youtube.com/watch?v=InuahfA2V_w).

The Actions

In general, the 13 submitted actions of the MARLISCO Marine Litter Forum in Ireland emphasise the importance of changing human behaviours to address issues of marine litter in Ireland. These correspond to a number of recognised approaches to address issues of waste and litter, such as increasing **Education/Awareness** (5), **Reducing** the amount of litter created (5), **Recycling** (1), **Redesigning** (1) and encouraging **Appropriate Disposal** of Waste (1), indicating that the overall concepts are well known but that definite measures and actions are required to effectively address marine litter in Ireland. The submitted actions, outlined below from A to M, are a product of cross-sectoral collaboration, while the individual votes indicate which actions receive support from cross-sectoral stakeholders.







Action A: General Plastic Levy

This action was proposed by three of the live audience groups and one satellite group and involves placing a general levy on all plastic objects, aiming to replicate the success of the plastic bag levy system introduced by the Irish Government in 2002. In more detail the suggested action was seen to potentially include a higher tax on cosmetics using plastics as well as a general plastic levy and link in with other proposed forum actions such as (Action B) education fund to raise awareness of waste issues by ring-fencing levy funds, and (Action M) a plastic bottle refund scheme.



Figure 4. Total percentage of individual votes on most effective action per priority for Action A: General Plastic Levy



Figure 5. Total percentage of individual votes on most implementable action per priority for Action A: General Plastic Levy

Voting results

A general plastic levy was seen as the most effective action securing over 30% of the first preference votes, just under 10% of the second preference votes, and just over 5% of the third preference votes (see figure 4). This action was also voted the most implementable; receiving over 20% of all first preference votes, and about 5% in both; second and third preferences (figure 5.). **Overall this action received the highest percentage of individual votes for most effective and most implementable action.**







Action B: Education Fund From A Plastic Levy

As part of the general plastic levy proposal, this action proposed to ring-fence money raised by a general plastic levy into an education fund to support awareness raising campaigns and other activities. Under discussion, this action was found to work in conjunction with several other actions including the general plastic levy charge (Action A), plastic shock public awareness (Action D), the green star scheme for products (Action J), strategically located water dispensers (Action K), supermarket packaging schemes (Action L), and the plastic bottle refund scheme (Action M).







Figure 7. Total percentage of individual votes on most implementable action per priority for Action B: Education Fund From A Plastic Levy

Voting results:

The education fund received over 5% of the first preference votes in the most effective action voting, but over 15% of all second preference votes (figure 6). Similarly, for most implementable action the education fund secured over 5% of all first preference votes, however above 20% of all second preference votes, and less than 5% of the third preference votes (figure 7).

This action received the highest percentage of all second preference votes, reflecting that **this action is deemed very effective and implementable through a collaborative approach.**







Action C: Positive Pester Power

Two groups, within the forum and one satellite group, proposed this action which aims to encourage and support children to be the driving force behind changing parents' attitudes and habits in relation to recycling and waste management at home. Positive Pester Power is to be achieved through targeted education programmes within schools and similar outreach with focus on the education.





Figure 8. Total percentage of individual votes on most effective action per priority for Action C: Positive Pester Power

Figure 9. Total percentage of individual votes on most implementable action per priority for Action C: Positive Pester Power

Voting results:

Positive pester power received about 5% of the first and third preference votes for most effective action, though few second preference votes (figure 8). Action C obtained approximately 10% of votes in the first, second and third preference votes during the most implementable action vote and subsequently ranked as second most implementable action (figure 9) and ninth most effective when combining the three preference categories for each vote.







Action D: Plastic Shock Public Awareness

This action aims to raise awareness by utilising a combination of multimedia formats, such as the MARLISCO animation and pictures, allowing the public to gauge the impacts of marine litter. This action could work in conjunction with many other suggestions such as an education fund (Action B), with the potential to direct funding from an education fund towards the creation of a variety of thematic multimedia outputs using images or videos.



Figure 10. Total percentage of individual votes on most effective action per priority for Action D: Plastic Shock Public Awareness



Figure 11. Total percentage of implementable votes per priority for Action D: Plastic Shock Public Awareness

Voting results:

The plastic shock public awareness received less than 5% of the first preference votes and less than 10% in both the second and third preference categories for most effective action (figure 10). During the most implementable action votes plastic shock public awareness scored just less than 10% of first and second preference votes and less than 5% of the third preference votes. **Combining all preference categories Action D ranks fifth most implementable action and seventh most effective.**







Action E: Clearer Product Specifications

This action emerged from the proposals of two live audience groups and suggests that product specifications need to be more thorough, advocating a policing of product specification to ensure that consumers are made aware of plastic content of products and packaging. Furthermore the action includes that any plastic packaging would be labelled with pictures to promote awareness of marine litter issues and impacts. A traffic light system was suggested to highlight the risks packaging contained for wildlife and the marine environment, if not disposed correctly.



Figure 12. Total percentage of individual votes on most effective action per priority for Action E: Clearer Product Specifications



Figure 13. Total percentage of individual votes on most implementable action per priority for Action E: Clearer Product Specifications

Voting results:

Clearer product specifications gained just over 10% of the first preference votes and approximately 5% of the second and third preference votes for most effective action (figure 12). In the most implementable action vote, Action E received about 10% of the first and third preference votes though less than 5% of the second preference votes. In combination of all three preference votes clearer product specifications ranked fifth for most effective action and sixth for most implementable action.







Action F: Ban Plastic in Landfills (Also Ban Microbeads)

This action includes a ban of micro-beads from cosmetics with the tag line: "There's nothing beautiful about micro-beads." In combination with a ban of plastic from landfill sites with the tagline: "Don't bury our problems." This action aims to promote awareness of the risks posed by micro-beads and plastics in general and that the reduce-reuse-recycle triangle needs to be attacked at all points to implement these proposals.

"Ireland is in a unique position to capitalise on its position as a small country. We have extant industries that are manufacturing particular products and we can act locally to have global significance." – *Participant*.





Figure 14. Total percentage of individual votes on most effective action per priority for Action F: Ban Plastic in Landfills (Also Ban Microbeads)



Voting results:

Action F obtained about 5% of first, second, and third preference votes for most effective action (figure 14) and received very similar results for most implementable action voting, with approximately 5% from each preference vote (figure 15). Action F ranks sixth for most effective and eight for most implementable action when combining all preference votes.







Action G: Force Industry To Clean Up Beaches

This action proposes to get industry to help fund beach cleans on those beaches where their products are washed up. The action seeks to make industry aware and lead beach cleans and integrate this idea as part of appropriate legislation.



Figure 16. Total percentage of individual votes on most effective action per priority for Action G: Force Industry To Clean Up Beaches



Figure 17. Total percentage of individual votes on most implementable action per priority for Action G: Force Industry To Clean Up Beaches

Voting results:

Action G obtained less than 5% of the first and second preference for most effective action but scored over 5% of the third preference votes (figure 16). For most implementable action voting, industry led beach cleans received no votes in the first preference category and less than 5% in the second preference but scored nearly 10% of the third preference votes (figure 17). Action G ranks 11th for most effective action and 13th for most implementable action when combining all preference votes.







Action H: Reduce Packaging (Legislation)

This action proposes the use of legislation to enforce reduced amount of packaging specifically for cosmetics and toys. This action relates to the idea that using less packing means that there is less packaging to enter pathways to our oceans..



Figure 18. Total percentage of individual votes on most effective action per priority for Action H: Reduce Packaging (Legislation)



Figure 19. Total percentage of individual votes on most implementable action per priority for Action H: Reduce Packaging (Legislation)

Voting results:

Reduce packaging (legislation) attained approximately 10% of the first and third preference votes for most effective action and just over 5% in the second preference category (figure 18). In the most implementable action voting poll, reduce packaging (legislation) received over 5% of votes in the first, second, and third preference categories (figure 19). When combining all preference votes reduce packaging ranks fourth most effective action and seventh most implementable action.







Action I: Fishing For Litter

This action asks fishermen to remove and collect debris found in nets and bring such litter back to port, where it will be collated and disposed appropriately free of charge.



Figure 20. Total percentage of individual votes on most effective action per priority for Action I: Fishing For Litter

Distribution of preference votes for most implementable action for Action I

Figure 21. Total percentage of individual votes on most implementable action per priority for Action I: Fishing For Litter

Voting results:

Fishing for litter received less than 5% in all three preference categories for most effective action (figure 20). In the most implementable action vote; fishing for litter attained less than 5% of first and second preference votes, and over 5% of the third preference votes. **Fishing for litter ranks 11th for both; the most effective action and the most implementable action when combining all three preference votes respectively.**







Action J: Green-star Scheme For Products

Action J is a positive incentive scheme, where companies and producers apply for a green star to display on their product packaging if its meets the following criteria:

- 1. Environmentally friendly marketing & packaging
- 2. Product itself is environmentally benign
- 3. There is a defined carbon eco-footprint of the entire lifespan of the product

In discussion the action was also seen to work with a capital incentive for companies retaining greenstars and the action was perceived to potentially work well together with action H, legislation of packaging reduction, and action E, clearer product specifications. Furthermore, discussion also emphasised the action's strong correspondence to on-going activities and the remit of Repak in Ireland, highlighting stakeholder support of positive incentive schemes and potential development options to expand Repak's activities with probable further collaboration with other sectors. Repak, a not for profit organisation since 1997, uses levies of member companies to fund the collection and recycling of materials by local authorities and contractors and is helping member companies to achieve their legal responsibilities set out in Waste management (Packaging) Regulations (S.I. 798 of 2007). Repak are the sole registered licensor of the Green Dot, the mark of industry led recycling, in the Republic of Ireland, which all member companies can display on their packaging.



Figure 22. Total percentage of individual votes on most effective action per priority for Action J: Green-star Scheme For Products



Figure 23. Total percentage of individual votes on most implementable action per priority for Action J: Green-star Scheme for Products

Voting results:

The green-star scheme for products received just short of 10% of third and second priority votes, and less than 5% of the first preference votes for most effective action (figure 22). For the most implementable action, the green-star scheme received over 10% of the second preference votes, about 5% in the third preference category and less than 5% of the first preference votes. In combination of all preference votes the green-star scheme was voted the seventh most effective and the eighth most implementable action.







Action K: Dispensers For Water

This action proposes to strategically locate dispensers for water to reduce plastic bottle consumption.



Figure 24. Total percentage of individual votes on most effective action per priority for Action K: Dispensers For Water



Figure 25. Total percentage of individual votes on most implementable action per priority for Action J: Dispensers for Water

Voting results:

Dispensers for water received over 5% of the second preference and less than 5% of first and third preference votes for most effective action (figure 24). For most implementable action, dispenser for water received just over 5% of first preference votes and less than 5% of second preference votes (figure 25). Dispensers for water rank 10th for both; most effective and most implementable action when combining all preference votes respectively.







Action L: Supermarket Packaging Survey (Community Action)

This community action aims to encourage supermarkets and consumers to take stock of their plastic use, aiming to reduce the use of plastic packaging material. Primarily proposed as a grassroots campaign, this action suggests to survey supermarkets and consumers in relation to packaging to create awareness and subsequently influence behaviour of both supermarkets and consumers in a positive way.



Figure 26. Total percentage of individual votes on most effective action per priority for Action L: Supermarket Packaging Survey (Community Action)



Figure 27. Total percentage of individual votes on most implementable action per priority for Action L: Supermarket Packaging Survey (Community Action)

Voting results:

Supermarket packaging survey (community action) received no first or second preference votes and less than 5% of the third preference category votes for most effective action and rank 13th when combining all preference votes (figure 26). Action L received less than 5% of votes in the first, second, and third preference categories for most implementable action and ranks 12th when combining all three preference categories (figure 27).







Action M: Plastic Bottle Refund Scheme

The plastic bottle refund scheme proposes that used plastic bottles could be returned to key locations, where a remittance for returning a bottle would be received.



Figure 28. Total percentage of individual votes on most effective action per priority for Action M: Plastic Bottle Refund Scheme

Distribution of preference votes for most implementable action for Action M 40-30-% 20-10-0-1st 2nd 3rd

Figure 29. Total percentage of individual votes on most implementable action per priority for Action M: Plastic Bottle Refund Scheme

Voting results:

The plastic bottle refund scheme received over 10% of the first and third preference votes and just below 10% of the second preference votes for most effective action (figure 28), while securing 15% of the first preference category votes, just over 10% in the third preference and approximately 5% of the third preference votes for most implementable action (figure 29). In combination of all three preference votes the plastic bottle refund scheme ranks second for most effective action and third for most implementable action.







Combined preference votes per action:

The below graphs indicate the strength of support for the individual actions from forum participants. Individuals were able to vote with 1st, 2nd and 3rd preference on which 'actions' they thought were the most effective and with three additional preference votes indicating most implementable for reducing marine litter in Ireland. Percentages were calculated by taking a weighting of preference votes into account, where 1st preference received three points, 2nd preference received 2 points and 3rd preference received 1 point. The scores were totalled for each action and percentages were calculated from the total number of points in order to illustrate forum participants support for proposed actions at a glance.



Figure 30. Combined weighted preference votes in percentage for most effective action



Figure 31. Combined weighted preference votes in percentage for most implementable action

Action Titles:

- Action A: General Plastic Levy Charge
- Action B: Education Fund From A Plastic Levy
- Action C: Positive Pester Power
- Action D: Plastic Shock Public Awareness
- Action E: Clearer Product Specifications
- Action F: Ban Plastic in Landfills (Also Ban Microbeads)
- Action G: Force Industry To Clean Up Beaches
- Action H: Reduce Packaging (Legislation)
- Action I: Fishing For Litter
- Action J: Green-star Scheme For Products
- Action K: Dispensers For Water
- Action L: Supermarket Packaging Survey (Community Action)
- Action M: Plastic Bottle Refund Scheme

The graphs illustrate a snapshot of informed stakeholder opinion across sectors indicating what type of actions and measures are deemed to be effective and most implementable addressing issues of marine litter in Ireland.







Summary

The MARLISCO Marine Litter Forum in Ireland created a non-confrontational environment and cross sectoral approach, which highlighted the multiple sources, types and current and potential impacts of marine litter in Ireland and provided the opportunity for participants to work together to propose actions that can reduce marine litter. Change in human behaviours was identified as the key to address issues of marine litter in Ireland, which strongly reflected in discussion and through the proposed actions.

Discussion about proposed actions pointed to potential links between individual suggestions to complement each other, emphasising that solutions to issues of marine litter in Ireland have to be approached from multiple angles through collaboration. This was further substantiated through the variety of proposals; including several top down approaches e.g. through legislation matched with a number of bottom up actions e.g. focused on raising awareness.

A substantial proportion of suggestions (five) focused on or linked to ideas of increasing education and raising awareness. This indicated that participants felt a general lack of knowledge about marine litter needs to be addressed. Many suggestions relate to established strategies of waste and litter management, such as appropriate disposal of waste and the reduce, reuse, recycle and redesign concepts, highlighting that innovative ideas and more specific actions are required to combat issue of marine litter. Five proposals concentrated on reduction of litter in Ireland signalling that participants considered this an area of waste management, where significant improvements can and should be made to successfully address marine litter concerns.

The event was documented in National press (Irish Times) and in online articles via the CMRC and Marlisco websites. The CMRC online article received over 2382 views to date and was distributed via social media on Marlisco Project and Marlisco Ireland Facebook sites. The event received positive feedback on social media via twitter and Facebook and through personal contact with the participants. The concept has since been used to implement similar events in Cyprus, Turkey, Portugal, Romania, Bulgaria, the UK and Italy with upcoming events in Slovenia, France, Germany and the Netherlands.

In summary, the forum was an innovative event that captured opinions from a diverse group of participants, through a consensus approach on how they would like to address marine litter in Ireland. Importantly, through voting, the forum enabled individuals to express their own opinions.







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