



**LIFE**  
Environmental Governance & Information



**Integrated information and awareness campaign for the reduction  
of plastic bags in the marine environment**  
LIFE14 GIE/GR/001127

# *Replication Handbook*

**January 2019**

The **LIFE DEBAG** project “Integrated information and awareness campaign for the reduction of plastic bags in the marine environment” (LIFE14 GIE/GR/001127) is co-funded by the EU Environmental Funding Programme

## **LIFE Environmental Governance and Information.**



Part of the approved budget of LIFE DEBAG project is co-funded by own funds of the Green Fund (Hellenic Ministry of Environment and Energy)).



Implementation period: 1.9.2015 until 31.3.2018

<u>Project budget:</u>	Total budget:	1,257,545 €
	EU financial contribution:	754,527 €

### **LIFE DEBAG's Participating Beneficiaries::**



**Coordinator: University of Patras**



**Oikologiki Etaireia Anakyklosis**



**Mediterranean SOS Network**



**TERRA NOVA Environmental Engineering Consultancy Ltd.**



**Research University Institute of Sustainable Development and Human Resources, Panteion University**

# Replication Handbook

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# 1. The LIFE DEBAG Project

LIFE DEBAG has developed and implemented an integrated information and awareness campaign to prevent - reduce plastic bag pollution in the marine environment. The project started on 1/9/2015, was completed on 31/01/2019 and was performed on two main axes:

1. Information and awareness activities in the project's pilot area, the Island of Syros, by monitoring their impact on both coastal and marine environment and on consumer habits.
2. Activities for the dissemination of the project's results, citizens' awareness-raising at national level (Greece), as well as consulting with stakeholders in order to co-author proposals to contribute to the Greek legislation.

LIFE DEBAG project has had a successful course and completion, by accomplishing its set goals and improving the environmental status of the Syros' coastal and marine environment - which was systematically monitored in a scientifically documented way - through effective educational and public awareness-raising activities, and stakeholder engagement. In addition, LIFE DEBAG managed to influence the Greek legislation on lightweight carrier plastic bags. LIFE DEBAG constitutes a good example for reproduction and transfer to other regions as well as for other single-use plastics based on its excellent results.

The present Handbook is intended not only to provide basic guidance to local authorities, institutions and other organizations and/or individuals but to inspire the implementation of a comprehensive campaign to reduce single-use plastic bags or other similar single-use plastics (i.e., straws, cutlery, cups) in the marine environment, as well.





## 2. Environmental Problem Targeted

The first step in solving a problem is to recognize its existence of one. Thus, by designing an information campaign for the public, we must at an early stage collect all the current, scientifically documented information that constitutes the environmental problem that we want to approach, whether it is the plastic bag issue, as in the case of LIFE DEBAG, or some other single-use plastic. The data that will be gathered, will form the basis for our information material, but also our key arguments to convince the public and the relative stakeholders in order to draw attention and to improve their knowledge of the impact of single-use plastics in the natural environment and particularly in marine environment.





## Some information that forms the basis of the environmental problem of the plastic bag

- ✓ Plastic bags are one-third (1/3) of the litter lying on the seabed around the European Coastline.
- ✓ They end-up very easily in the marine environment due to their aerodynamic/hydrodynamic shape and light weight.
- ✓ It is one of the deadliest types of litter for marine animals and birds (usually mistaken for food) along with balloons and fishing gear.<sup>1</sup>
- ✓ Only a 1-3% of plastic bags is recycled.
- ✓ Plastic bags, like all plastics, sooner or later get fragmented in small pieces in the marine environment.<sup>2</sup>
- ✓ Dolphins, whales, birds and fish are found dead with their stomachs full of plastics, including plastic bags. In 2019, a young curvier beaked whale was washed up dead, with 44 kg of plastic in its stomach, a lot of which was plastic bags.<sup>3</sup>



1. Wilcox C, Mallos NJ, Leonard GH, Rodriguez A, Hardesty BD (2016) Using expert elicitation to estimate the impacts of plastic pollution on marine wildlife, *Marine Policy*. 65, 107-114. <https://doi.org/10.1016/j.marpol.2015.10.014>
2. Eriksen M, Lebreton LCM, Carson HS, Thiel M, Moore CJ, Borrero JC, et al. (2014) Plastic Pollution in the World's Oceans: More than 5 Trillion Plastic Pieces Weighing over 250,000 Tons Afloat at Sea. *PLoS ONE*. 9 (12): e111913. <https://doi.org/10.1371/journal.pone.0111913>
3. <https://www.nationalgeographic.com/environment/2019/03/whale-dies-88-pounds-plastic-philippines>



## Some more alarming research results

- Plastic, sooner or later, fragments in small pieces (microplastics) in the marine environment. At the moment, more than 5 trillion plastic pieces weighing over 250,000 tons afloat at sea<sup>1</sup>
- European seafood lovers are eating up to 11,000 tiny pieces of plastic each year, along with their seafood<sup>2</sup>
- Plastic fibres are now present in tap and bottled water, beer and salt<sup>3</sup>

### 3. Can we replicate the Project for other plastics we encounter as litter in the marine environment?

The plastic pollution of marine ecosystems has been widely recognized as one of the most critical modern, global problems. It has been estimated that over the past 6 decades 8,300 million tonnes (Mt) of plastics have been produced, most of which were single-use plastics. From these, 6,300 Mt of waste were disposed, approximately 9% of which was recycled, 12% incinerated and 79% accumulated in landfills or escaped to the natural environment and eventually to the global ocean, the final sink<sup>4</sup>. The ten most common disposable plastic items on European beaches and seas along with lost and abandoned fishing gear account for 70% of the total number of marine litter.

Based on the above, the need for actions aiming to reduce single-use plastics at source, just like LIFE DEBAG with light-weight plastic bags, is imperative. Thus, each set of actions proposed in this Handbook based on the LIFE DEBAG experience, can be applied to single-use plastics that share similar properties and features with thin plastic bags by appropriately adapting the available material.

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1. Eriksen M, Lebreton LCM, Carson HS, Thiel M, Moore CJ, Borrero JC, et al. (2014) Plastic Pollution in the World's Oceans: More than 5 Trillion Plastic Pieces Weighing over 250,000 Tons Afloat at Sea. PLoS ONE. 9 (12): e111913. <https://doi.org/10.1371/journal.pone.0111913>
  2. Van Cauwenberghe L, Janssen C, (2014) Microplastics in bivalves cultured for human consumption. Environmental Pollution, 193, 65-70. <https://doi.org/10.1016/j.envpol.2014.06.010>
  3. Kosuth M, Mason SA, Wattenberg EV (2018) Anthropogenic contamination of tap water, beer, and sea salt. PLoS ONE 13(4): e0194970. <https://doi.org/10.1371/journal.pone.0194970>
  4. Geyer, R., Jambeck, J.R., Law, K.L. (2017) Production, use, and fate of all plastics ever made. Sci. Adv., 3(7), e1700782. <https://doi.org/10.1126/sciadv.1700782>



## 4. Actions

### 4.1. Identification of the current situation and the environmental problem

The first phase of implementing an integrated information campaign should include the surveying of the current situation regarding the plastic bag or the single-use plastic product that we are interested in focusing on. For LIFE DEBAG, a research was carried out (Baseline Situation), which included the review of production, use and distribution data, the legislative framework in the European Union and the Member States, the environmental and socio-economic impact of plastic bags. Depending on availability and resources, we may adapt this step for the specific site or plastic product we wish to target and / or update the data, which change with time.

The [Baseline Situation](#) considering the current status of the plastic bag issue was fully covered by the LIFE DEBAG action.

### 4.2. Communication Strategy

In the preparatory phase of LIFE DEBAG project, the planning of the project's communication strategy along with a dissemination of information plan and awareness-raising activities were developed. This material may be found in the [Communication Strategy](#) report, for reproduction and adaptation contextually. As part of the information / communication strategy, we need to create a database that includes all media (newspapers, electronic press, TV channels, radio) at local or national level, depending on where we want to implement the campaign, and a database of stakeholders.



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## 4.3 Assessment of the baseline situation and monitoring of the environmental problem

When implementing an awareness-raising campaign, it is particularly important to be able to evaluate its impact with scientifically documented, tangible, results. In the LIFE DEBAG case, we did not focus only on the impact of the information campaign on the population's plastic bag consumption but, in addition, we established a robust monitoring scheme of plastic pollution in the coastal and marine environment of Syros island. The monitoring of the coastal and marine environment pollution on a specific area, in order to check the effectiveness of an information and awareness-raising campaign, is a LIFE DEBAG's innovation with no precedent, to our best knowledge.





In order to capture the baseline situation regarding the consumption of plastic bags on Syros Isl. and their abundances in the coastal and marine environment, marine litter surveys were carried out together with questionnaire surveys on consumers and shop-owners, prior to the launch of the awareness-raising campaign. Then, and until the end of the project, we continued to carry out litter recordings on selected beaches and on the seafloor of selected gulfs of the island, in order to have a continuous insight into the impact of our ongoing information campaign. Moreover, questionnaire surveys to consumers, outside supermarkets (where plastic bags were counted), were continued on a two-month basis, to capture the trend in plastic bag consumption on the island. In this way, we were able to monitor whether the actions implemented had a real effect on consumers' behaviour and on the environment or whether we should change practices.

The material from the beach litter recordings and the questionnaires from consumers and shop-owners are provided in [Research Material and Plastic Bag Consumption Questionnaires](#) and [Results of field-work research & questionnaire survey for consumer and retailers](#).





In a more scientifically advanced level, during LIFE DEBAG, innovative methods and cutting-edge technologies were used for surveying litter and plastic bags at the seabed of two selected bays of Syros (Ermoupolis and Kini), such as remotely operated vehicle (ROV) and unmanned surface (floating) vehicle (USV). Unmanned aerial vehicles (drones) were also used for the detection of litter on selected beaches, a very promising approach, particularly for remote coasts. In the framework of the project, new methodologies were developed for the assessment of the marine litter pollution in the coastal and marine environment using intelligent, unmanned systems.

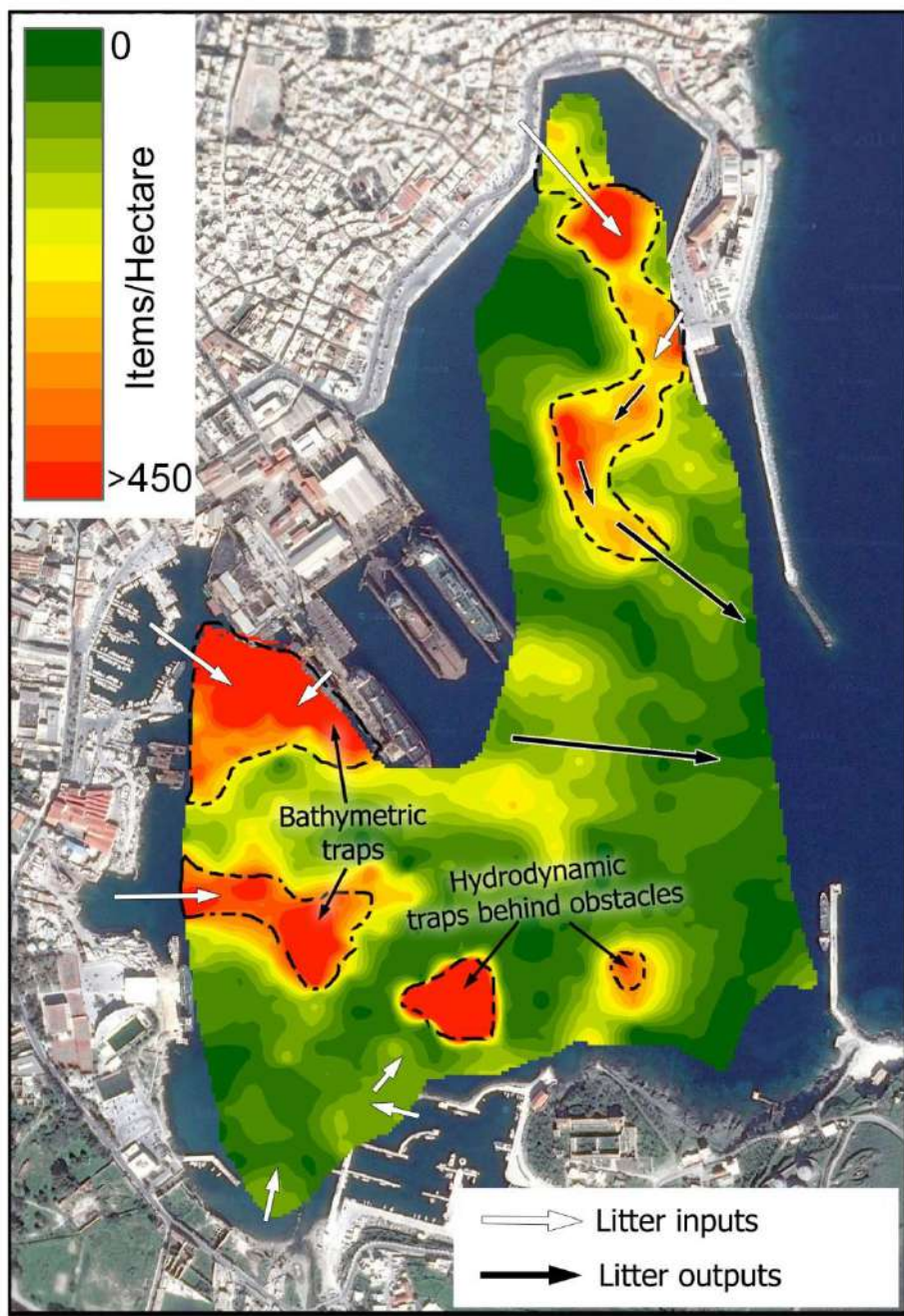
The collection of such “hard” scientific data that is, indeed, difficult for the general public to perform, had beneficial effects on the course of a campaign similar to LIFE DEBAG. Pictures, videos and data on the litter pollution levels of a coastal and/or marine area, depict the current situation, shed light on an unseen side of the problem, and provide evidence that there is an environmental issue to be solved by taking action and changing habits not only globally, but locally as well. At the same time, and during the implementation of the information campaign, the communication of its positive impact on the natural environment (if any), to the population and the social partners, encourages them to pursue and reinforce these efforts and cultivates the sense of public ownership of the Project. Consumers, shopkeepers, local authorities, etc. are actively involved since they are now aware that their behavioural change has reduced pollution in the marine environment.

Although the use of innovative methodologies and cutting-edge technologies is not achievable by common citizens, it is nevertheless recommended to implement them, in collaboration with Research Institutes or Universities, as LIFE DEBAG has shown that they have greatly improved the effectiveness of the campaign.



**Results of litter density on the seafloor of Ermoupolis Bay, based on underwater camera recordings, collected in the framework of LIFE DEBAG.**

Total seafloor litter density









## 4.4. Mapping and approaching the stakeholders

Active stakeholder engagement is crucial to the implementation of a successful information campaign. The first step to be made is to "map" all stakeholders and group them according to their attributes, in order to decide "where" and "how" to approach each group. Then, we have to inform them on the environmental problem we have chosen to solve, listen to and encourage them to share their ideas, proposals and concerns, and then give them an active role in our campaign, cultivating a sense of public ownership, eventually.

In LIFE DEBAG, the main stakeholders on a local level (Syros isl.) involved: (a) the Local Authorities, (b) the owners and employees of retail outlets, (c) the owners and employees of restaurants, (d) the Chamber of Commerce, (e) the local associations / groups interested in preserving the environment, (f) the students and teachers in Primary and Secondary Education, (g) the students and professors of University of the Aegean and, of course, (h) the citizens. In each case, it is important to start by identifying the stakeholder groups and how to reach, inform and integrate them in the campaign, which may vary from region to region, from country to country and from one single-use product to another.

The stakeholders at national level may include: (a) policy makers such as various public bodies including the Ministry of the Environment and Energy and the Hellenic Recycling Agency (EOAN in Greek); (b) the regional and local authorities; (c) producers, dealers and importers of plastic bags and plastics, along with the Chamber of Commerce, (d) retailers, especially supermarket chains that give away free plastic carrier bags, (f) Universities and Research Institutes; (g) the Institute of Retail Consumer Goods (IEAKA in Greek); (h) environmental NGOs / representatives of civil society, groups / associations.



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## 4.5. Involvement of stakeholders, retail shop owners and managers

Although LIFE DEBAG's original plan was to inform shop-owners and managers in the pilot area of the project through stakeholder meetings, it seemed that this approach was not actually very effective, due to the fact that shop-owners' and managers' free time is very limited, because of their long working hours. A lot of effort was needed to convince them that the plastic bag issue was of direct interest to them and to persuade them to participate in an informative meeting. Corrective actions had therefore to be made, and so it was decided to inform them door-to-door with vis-à-vis communication, with a lot of visits and consistency during the project, so that there was dialogue and sharing of experiences with these critical social partners ([leaflet for shop owners](#)). This is an example of how we must listen to the needs of the social partners during the implementation of our campaign, which can vary from region to region and from group to group, and we should be prepared to have the flexibility to modify our original plans. As a result of the abovementioned information activities, 215 shop-owners in Syros signed the LIFE DEBAG [Voluntary Agreement](#) for the reduction of plastic bags.



## 4.6 Citizens

Approaching and informing citizens in the pilot area of LIFE DEBAG, the Island of Syros, took place via a door-to-door campaign, where LIFE DEBAG trained members visited residents of Syros at their homes and distributed a specially designed information brochure ([Information Leaflet for consumers](#)) and, for free, the reusable alternative; a cotton, durable bag with large capacity.

In addition, consumers in Syros were, also, addressed by the questionnaire survey on the assessment of the consumption of plastic bags, which had a twofold role: on one hand, the assessment of trends in the plastic bag consumption of Syros' population and on the other hand informing them on the plastic bag environmental issue.

In LIFE DEBAG's central information campaigns, the 3 «Plastic Bag Free Weeks», we gave special emphasis to informing and engaging all social partners in the many different events that took place. It is worth noting here that in order to reach as many citizens as possible, in the first year of implementation of the project, one of the main informative events in the "1st Plastic Bag Free Week" took place in the main square of Ermoupolis, the capital of Syros, with Dr Francois Galgani, Chair of the MSFD technical group on marine litter, Chair of the UN ENV/UNESCO/IMO group of experts (GESAMP) on plastic in the environment and Dr Francoise Claro (Museum National d'Histoire Naturelle, Paris, France) as speakers and preceded a popular musical event. The aim of these simplified but very substantial presentations, with simultaneous translation into Greek, was the approach and communication of international, distinguished scientists, outside the limits of conventional scientific / informative workshop, with the average Greek citizen, who mainly thinks that such an event does not concern him.







## 4.7. Engaging stakeholders at national level and contribution to national legislation

The stakeholders at the national level, as outlined above, were involved in LIFE DEBAG mainly through their participation in the [7 project consultation forum meetings](#). These meetings took place in Athens, the capital of Greece, and the fact that they were carried out under the auspices of the Ministry of Environment and Energy and the Hellenic Recycling Agency, added prestige and ensured the participation of many critical stakeholders.



The proposals of LIFE DEBAG ([LIFE DEBAG recommendations to the Ministry](#)) on the legislation concerning lightweight carrier plastic bags in Greece, as they emerged after consultation with the stakeholders, they were submitted to the different legislative bodies, including the Ministry of the Environment and Energy, and the Special Permanent Environment Committee of the Hellenic Parliament. The LIFE DEBAG's proposals have contributed significantly to the integration of the European Directive 2015/720/EU into the new Greek legislation (Article 6 of Law 4496/2017 and the JMD B'2812 /10.8.2017 No 180036/952/10.8.2017).

Moreover, in the LIFE DEBAG's final conference, voluntary agreements were signed by 5 supermarket chains for actions undertaken to reduce single-use plastic bags.

The above successful results were obtained by intensive efforts to bring together all the stakeholders at national level as well as the assurance of prestigious supporters. Even stakeholders who opposed to the objectives of the campaign participated, to express their objections and to share their concerns and demands with the aim of drafting legislative recommendations that respects all socio-economic and environmental aspects. In addition, with the process of involving the different social partners in forum meetings, there is also the opportunity of consulting between different disciplines and parties, to address the potential impact on their sector, after the changes that a successful campaign may bring.





## 4.8. Environmental education

The value of investing in Environmental Education of young people as a necessary condition for shaping responsible and sensitized adults was an important component of LIFE DEBAG, and it is highly recommended to be included in similar campaigns. Environmental Education, which was implemented as part of the LIFE DEBAG Project, included the development of an Educational Package "We Say Goodbye to the Plastic Bag", which consists of 6 Worksheets, 6 Information Sheets and a Teacher's Guide. The Educational Package is available to anyone interested, via the LIFE DEBAG site ([LIFE DEBAG Training Package](#)).



## 4.9. Dissemination and information activities of the campaign objectives and results

The maximum geographical dispersion of the objectives and results of our campaign is highly important, whether implemented at local or national level. The penetration of the internet is given in the present era and, for this reason, the creation of a website and/or pages in the social media is a necessity. Also, we should not omit to send press releases with the most important results of our campaign, as well as information about the environmental problem and its solutions. In the links below you can see, as an example, the site and the social media of the project (<http://www.lifedebag.eu>, [YouTube](#), [facebook](#), [instagram](#), [twitter](#)).



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## Instead of an Epilogue

Hundreds of information campaigns have been implemented, over the past few years, aiming to spread environmental messages, change behaviours, raise awareness among citizens and professionals to combat environmental problems and to improve the natural environment. The LIFE DEBAG project was one of these campaigns, standing out as a "good example", mainly on the basis of three important components:

1. It did not stay within the limits of the conventional patterns of information, awareness and education, but took into consideration the needs of today and of the region of implementation.
2. The established monitoring system of the coastal and marine environment has confirmed, in a scientifically substantiated way, the effectiveness of the campaign (see also 4.3.). Campaign's positive effects on the environment must be collected and disseminated to the general public. In this way, we encourage people to pursue and strengthen environmental efforts and, at the same time, we cultivate the sense of trust and ultimately public ownership.
3. Consultation with the appropriate stakeholders, as a tool for co-forming legislation recommendations, can act as leverage for incorporating European Directives into national law (see also 4.7.).





*With the contribution of the LIFE financial instrument of the European Community*

[www.lifedebag.eu](http://www.lifedebag.eu)