



Raising Public Awareness and Reducing Marine Litter for Protection of the Black Sea Ecosystem

LitOUTer (BSB-785)



COMMUNICATION GUIDELINES ON MARINE LITTER FOR THE BLACK SEA

2023 TRABZON

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PLEDGE of LitOuter PROJECT

English	Turkish	Georgian	Romanian	Bulgarian
Help the Black Sea Now	Şimdi Karadenize Yardım Et	დადგხმართ შავ ზღვას ახლა	Ajută Marea Neagră acum!	Помогнете на Черно море сега!
I pledge to not throw anything on land and sea	Hiçbirşeyi Yere Yada Denize Atmayacağımı Taahhüt Ediyorum	გპირდებით, რომ ხელოსას და ზღვაზე არავფერს დაჯერი	Mă angajez să nu arunc nimic pe uscat și în mare!	Обещавам да не изхвърлям нищо на сушата и в морето.
Do not THROW	ATMA	არ დაჯეროთ	Nu arunca!	БЕЗ ОТПАДЪЦИ
I pledge to do the following simple things to protect the Black Sea environment	Basit Şeyler Karadeniz'in Korumayı Taahhüt Ediyorum.	გპირდებით, რომ გავაკეთებ შემდეგ მარტივ აქტივობებს, რათა დავიცვა შავი ზღვის გარემო	Mă angajez să fac următoarele lucruri simple pentru a proteja mediul Mării Negre.	Обещавам да правя следните прости неща за опазване на морската среда в Черно море:
I pledge to not pour oil, paints, or chemicals down the drain or toilet.	Lavabolara Ve Tuvalete Kapatacağımı Yağ, Boya Yada Kimyasal Dökmeyeceğimi Taahhüt Ediyorum	გპირდებით, რომ არ ჩაველებ ნავთობს, საღებავს ან ქიმიურ ნივთიერებებს კანალიზაციაში ან ტუალეტში	Mă angajez să nu vars ulei, vopsele sau substanțe chimice în canalul de scurgere sau toaletă.	Обещавам да не изливам масла, бои или химикали в канализацията или тоалетната.
I pledge to conserve water by: - Turning off the tap when I am brushing my teeth - Showering for one minute less	-Dişimi Fircalarıken Çeşmeyi Kapatacağımı -1 Dk. Daha Az Süre Duş Alacağımı Taahhüt Ediyorum	გპირდებით, რომ დავიცვავ შეფანარუნებ წყალს შემდეგნაირად: - დაგებურავ ონკანს კბილების გახევისას - მხაჰს მივიღებ ერთი წუთით ნაკლებ დროში	Mă angajez să economisesc apa prin: - Închid robinetul când mă spăl pe dinți. - Fac duș cu un minut mai puțin.	Обещавам да пестя водата, като: - затворям кранчето, когато си мия зъбите; - вземам душ с една минута по-кратко.

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<p>I pledge to use multi-usage bags for shopping, if I have to, I only will use single-usage plastic bags.</p>	<p>Alışverişlerde, Kullanacağıma, Sadece Meçbur Kullırsam Plastik Kullanacağıma Veriyorum.</p> <p>Санта Садеце Тек Пожет Сөз</p>	<p>გპირდები, რომ ყველაფერსაც ერთჯერადი პლასტიკის ჩაბარების ნაცვლებს ვიყენებ.</p> <p>ჩემი გპირება ერთჯერადი პლასტიკის ჩაბარების ნაცვლებს</p>	<p>Mă angajez să cumpăr pungă reutilizabilă pentru cumpărături, dacă va trebui, voi folosi doar pungă de plastic de unică folosință.</p>	<p>Обещавам да използвам за пазаруване торбички, а само ако се налага, ще използвам торбички за еднократна употреба.</p> <p>Обещавам да купувам продукти с по-малко отпаковки.</p>
<p>I take responsibility to clean my environment. I organise training and clean-up activities to be an example.</p>	<p>Çevremi Temiz Tutmak İçin Sorumluluk Alıyorum. Örnek Olması İçin Eğitim Ve Temizlik Duzenliyorum.</p>	<p>ბიო პასუხისმგებლობას ვიღებ ჩემი გარემოს გასუფთავების მიზნით. ჩემი პასუხისმგებლობაა, რომ ვაწარმოო</p>	<p>Îmi asum responsabilitatea de a curăța mediul. Organizez activități de instruire și curățare pentru a fi un exemplu.</p>	<p>Поешам отговорност за почистването на околната среда. Ще организирам обучения и дейности по почистване, за да дам пример.</p>

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PREFACE

Marine litter pollution has been recognized as a global issue raising grave concerns over the state of the marine and coastal environment. This complex trans-national problem has been addressed by various regional interventions among them the project *“Raising Public Awareness and Reducing Marine Litter for Protection of the Black Sea Ecosystem (LitOUTer)”* promoting raising common awareness and joint actions to reduce river and marine litter among four Black Sea countries. The project has been supported by the Joint Operational Programme Black Sea Basin 2014 - 2020. Six partners (KTU-MSF-Türkiye, IBEDC-Georgia, MN-Romania, IO-BAS-Bulgaria, NIMRD-Romania, and BSNN-Bulgaria) under the leadership of the Karadeniz Technical University, from four Black Sea countries have worked together to raise public awareness about marine litter impact. The consortium of NGOs, higher education and scientific research institutes from four countries employs innovative awareness raising methods including information exchange, education and training and demonstration of marine litter movements by web-based hydrodynamic model.

There were many materials and techniques applied for raising public awareness during the project period. Questionnaires (two times before and after the training activities), training activities for many different stakeholder groups such as students, children, teachers, women, fishermen, NGO, decision-makers, religious men, headmen, maritime sectors, tourism sectors, etc., workshops, field studies, clean-up activities, international symposium, many different types of printed materials, toys, play cards, and origami game for children have been used for raising public awareness in the project target areas in all partner countries. The litter distributed model was run for four river discharge basins one from each partner country and distributed scenarios by wind direction and wind speed and the litter load amounts.

During the project period project teams directly reached more than 18000 participants, and we believe that the indirect reach number was at least 5 times higher than direct reach via social and mass media.

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With these results, we can say we reach our aim as a team and we believe that with this acceleration the impact will increase cumulatively.

As the project leader, we want to thank all project teams from different countries. We believe that the created friendship will continue and this collaboration will open new project possibilities.

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1. INTRODUCTION

Marine litter pollution has been recognized as a global issue raising grave concerns over the state of the marine and coastal environment. The potential damage caused by marine litter is multi-dimensional and can be divided into three major categories including ecological, social and economic impacts. This complex transnational problem has been addressed by various regional interventions among them the project *“Raising Public Awareness and Reducing Marine Litter for Protection of the Black Sea Ecosystem (LitOUTer)”* promoting raising common awareness and joint actions to reduce river and marine litter among four Black Sea countries. The project has been supported by the Joint Operational Programme Black Sea Basin 2014 - 2020. Lead partner is the Karadeniz Technical University, Marine Science Faculty, Trabzon, Türkiye and partners are the International Business and Economic Development Center (IBEDC), Georgia; Mare Nostrum NGO, Romania; the Institute of Oceanology - BAS; Bulgaria, the National Institute for Marine Research and Development “Grigore Antipa”, NIMRD, Romania; and the Black Sea NGO Network, Bulgaria. The consortium of NGOs, higher education and scientific research institutes from four countries employs innovative awareness raising methods including information exchange, education and training and demonstration of marine litter movements by web-based hydrodynamic model.

The Communication Guidelines on Marine Litter for the Black Sea (CGML-BS) provide a summary of partners’ experience in communication within raising awareness and training activities. The guidelines present an overview of the project achievements in addressing key regional target groups with their specific awareness and communication requirements. The CGML-BS focuses on the results and impacts of communication over certain thematic areas associated with effective marine litter reduction.

The CGML-BS will be used to further the project achievements and sustain their influence on the target groups in the Black Sea countries involved, raising awareness on the marine litter issue and the importance of its solution, shaping their understanding of the marine environment, and

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improving their knowledge of environmental policies on all levels from local to regional. This, in turn, should build support for the policies implementation and demonstrate the added value for the marine environment, economy, human health and wellbeing.

2. BLACK SEA CHARACTERISTICS AND THEIR INFLUENCE ON MARINE LITTER POLLUTION

The Black Sea is a nearly enclosed and zonally elongated basin with the zonal dimension of about 1200 km and the meridional dimension varying from 500 km on the western side to 250 km towards the eastern side (Figure 1) with a surface area of 423,000 km². The Black Sea receives fresh water inflows all around the basin. The River Danube being one of the largest rivers in Europe introduced dramatic effects on the Black Sea ecosystem. The Black Sea is a strongly stratified system and its stratification within the upper 100 m layer. The deep homogenous layer that has a thickness of 2000 m within the abyssal plain of the sea possesses almost vertically uniform characteristics below 200 m. The Black Sea is connected to the world ocean through the Turkish Straits Systems (TSS).

Being one of the 'youngest' seas in geological terms, the Black Sea was formed 7500 - 8000 years ago, and used to be a fresh water lake. It is locked between the tectonic plates of Europe and Asia and is over 2 km deep in places. The Black Sea surface area is 423 000 km², and its catchment area is five times bigger, 2 414 000 km², with a population of 191 994 000 discharging waters and waste. There are six littoral countries: Ukraine, Romania, Bulgaria, Türkiye, Georgia, and Russian Federation.

The Black Sea has positive freshwater balance, which means that it receives more fresh water from the rivers and rainfall than it loses from evaporation. The surplus of water therefore flows through the Bosphorus into the Marmara Sea. Thus, two flows through the straits are formed. The upper flow leaves the Black Sea and carries surface water out of it. Meanwhile a bottom flow carries salt water, about 35% from the Mediterranean to the Black Sea. The salty water mixes with the waters of the basin proper and that results in a comparatively low salinity at the surface,

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about 17,5 - 18%. The volume of the bottom flow is about 300 cubic km, roughly half of the surface flow.

Because of the specific characteristics described above, the Black Sea has two distinct water layers: the lighter upper layer from 0 to approximately 200 m deep and the heavier lower layer from 200 m down to the seabed. This stratification of waters causes weak vertical circulation within them.

The waters from the two layers do not mix very easily and that fact has an enormous influence on life in the sea. In the entire Black Sea at a depth greater than 150 - 200 m there is a permanent hydrogen sulfide zone devoid of aerobic life forms. Oxygen is completely absent at this level. Oxygen rich surface waters supporting most life in the sea constitute only about 13% of the Black Sea volume.

These features influence the condition of the marine environment and the diversity of organisms depending on it, being closely related to marine litter as well. They are the key to the character and the problems of the Black Sea's environmental health.

Strong currents in the Black Sea are an important factor in transporting of dissolved substances, floating matter and living organisms throughout the sea thereby causing transboundary dissemination of pollution, invasive species, marine litter.

Because of its large catchment area compared to its own area the Black Sea is very vulnerable to pressure from land-based human activities and its environmental health is dependent from both coastal and non-coastal states in the catchment basin. Due to the same reason, it is vulnerable to climate change. A major type of problematic pollutants are varieties of solid waste dumped into the sea from ships and some coastal towns.

In general, in the Black Sea marine litter has been confirmed as a critical issue for the whole basin, intensified by territorial challenges such as significant pressure from land-based sources, aggravated by the basin's very large catchment area, extremely limited exchange with the world ocean, densely populated coast, well developed tourism along the coasts with accumulation of

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garbage on some beaches, busy maritime traffic and various additional inputs from rivers and discharges from numerous coastal ports, industrial zones and urban areas.

The physical characteristics of the Black Sea such as its semi-enclosed basin, strong stratification strong rim, and anticyclonic currents may affect the litter movement behavior all around the Black Sea basin (Figure-1). The litter may not sink easily and not discharge from the entire basin. The main sources of the marine litter are from land base, river basins and of course from maritime activities (Figure -2).

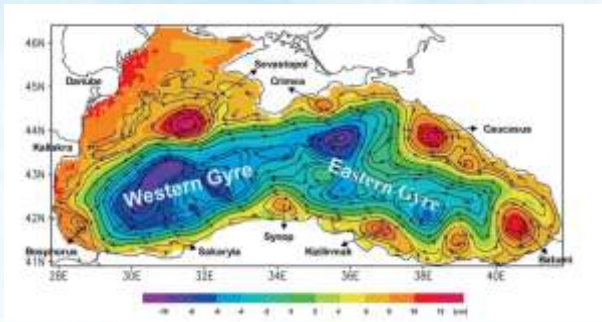


Figure-1: The Black Sea basin and main current (Understanding Black Sea Dynamics by Emil V. Stanev, Oceanography, Vol.18 No.2, 2005)



Figure-2: Litter movement scenarios all around the Black Sea basin (from LitOUTer project report)

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3. APPROACHES AND TOOLS OF EXTERNAL COMMUNICATION USED IN THE PROJECT

LitOUTer addresses a complex transboundary environmental issue with serious implications for the state of the marine and coastal environment, economy, safety, and human health. The project goal is to raise awareness about marine litter pollution in public institutions, local authorities, key stakeholders, and the general public focusing on the reduction and successful management of river and marine litter. Further specific objectives focus on raising awareness about the responsibilities of stakeholders for marine litter reduction, identifying the sources of marine litter, and identifying methods and good practices for mitigating the impact of marine litter through improved waste management, prevention at source, reduction, and cleaning strategies.

All those problems have been addressed by communication activities with clear and easy to understand messages designed by the partner teams for information, awareness, demonstration and training activities. They have been used with all key target groups - authorities, sectoral agencies, infrastructure and public service providers, maritime businesses, fishermen, educators, students, interest groups especially environmental NGOs, coastal communities and the general public.

To achieve effective communication, good understanding and cross-border visibility of LitOUTer among a wide range of different target groups, the partners have used effective communication approaches and tools to improve their knowledge and encourage understanding and cooperation.

The LitOUTer *communication activities* have been implemented throughout the project period with the *aim* of promoting the image of the project and its goals and objectives to the main project stakeholders and the wider public, raising awareness of the marine litter issue in the Black Sea countries, informing the national and regional public, encouraging involvement in project activities and ensuring visibility of the project results and achievements.

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These **communication elements and activities are integrated** in various larger events and products of information, awareness raising, education, practical research and dissemination that are part of all LitOUTer work packages. The interventions are based on **principles** such as: **information** - informing and improving the understanding and knowledge of all target audiences about the need to address marine litter pollution and the importance of taking part in such a project like LitOUTer together with regional partners, including the use of scientific information and data; **participation** - encouraging the involvement of coastal communities of coastal residents, administrations, businesses, educators, students and other stakeholders in the project activities; **cooperation and follow up** - promoting cooperation with partners, exchange, transparency of project information and achievements to national and regional contacts during and after project implementation.

The project communication activities have applied **key approaches and tools** with the aim to disseminate information and to raise the awareness and understanding of all target groups on marine litter issues so that they can understand the purpose of the project and the significance of the problem for the environment, the economy and their own life. It is essential that stakeholders should achieve better understanding of the values and services of healthy marine ecosystems.

The further **goals of communication** have been: - to help the identified target groups understand their role and contribution to the marine litter problems and to stimulate them to be active participants in public environmental activities; - to promote the idea of preventing pollution and learning more about proper solid waste management; - to support communication and cooperation between target groups helping with the protection and rehabilitation of the Black Sea and cross-border cooperation; - to support communication and networking, scientific collaboration and project follow up activities.

The LitOUTer approach to marine litter issues has been through the **promotion of integrated management** including prevention at source, reducing of waste through minimization, recycling, cleaning, improvement of public waste management policies and practices.

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The **main task** has been to reach those target groups that can have the most direct impact on waste reduction at source. The project begins with studies of policies and legal framework on national and regional level targeting marine litter abatement. They help to identify thematic areas and specific tools suitable for raising awareness of target stakeholder groups. Another group of activities outlines the methodology of for engaging stakeholders in LitOUTer. As many of the activities are related to prevention and reduction of waste at source and improvement of individual knowledge and habits of participants, the project has conducted two surveys of their knowledge, expectations and attitudes towards marine litter pollution. They have enabled the partners to identify the appropriate tools to encourage the involvement in public policies of stakeholder groups and the effectiveness of the project at the end of implementation. The project has supported many awareness raising information and education activities, open-air exhibitions and field studies, workshops and an international symposium. Of significant interest is the computer-based demonstration of sources, transport and deposition of marine litter starting from the mouths of rivers and following distribution along the coastline, prepared by scientific partners in LitOUTer. The interactive internet-based model with free access has been used as means for educating and engaging stakeholders. In addition to that the project has used predefined communication activities: communication start-up activities, envisaging dissemination of information about the start of the project; digital activities including web site, logo and social media activities; publications from the symposium and these guidelines; and public events, envisaging reports from events or activities on TV and other media.

4 LITOUTER PROJECT ACTIVITIES AND TARGET AUDIENCES

Some communication activities have been pre-defined by the project application. For the rest of the activities LitOUTer partners have applied additional efforts and have used their own media channels for dissemination of information and key messages about the project to a wider audience.

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4.1. Communication Challenges

Although marine litter is only one of the pollutants in the Black Sea damaging the health of the marine environment, it is becoming an increasingly big problem that goes beyond borders. It has some specific challenges not only in terms of solution but in terms of communication as well.

LitOUTer partners have communicated some messages to identified stakeholders to explain the complexity of the issue and the step by step coordinated efforts necessary for its solution:

We train for prevention at source, just like with the prevention of pollution with solid waste.

We train to reduce litter both on land and in the sea.

We act on land and involve both citizens and authorities in waste prevention and reduction.

We educate and involve many targeted stakeholder groups including maritime sectors.

We reduce accumulated litter by cleaning actions both on the coast and at sea where and when possible.

Partners have used various communication messages and have addressed the project target groups choosing suitable approaches for the specific activities.

EU countries in the project partners make their litter case studies according to the beach litter monitoring methodology included in the “Guidance on Monitoring of Marine Litter in European Seas”, a guidance document within the Common Implementation Strategy for Marine Strategy Framework Directive to monitor Descriptor 10 - Marine Litter for beaches.

4.1.1. Website, Logo and Social Media Activities

Target public: General public and all target groups.

Communication purpose: To achieve maximum visibility of the project with immediate and direct suggestion of the problem addressed and provide information on activities and achievements.

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The LitOUTer project logo and templates with the logo for presentations and press releases have been provided by the Lead Partner (LP) at the start of the project. The partners have been involved in the selection of the logo among a few versions. The logo has been used throughout project implementation period for documents, reports, publications, press-releases, website etc. The logo provides successful visualization of coastal pollution from beach activities with the outline of the Black Sea in the background and illustrates the problem addressed by the project. The **key message** of protecting the sea for the future generations is encoded in the image - Litter OUT! Project partners have been using the project logo on all related documents and activities with versions of the template both in English and in the national languages.

The project website has been produced by the LP and is available at <https://litouterproject.eu/> Partners have provided the translation of relevant sections in the national languages. The link to the project website is available on all brochures, leaflets, printed awareness materials and publications in social media.

Social media activities are quite varied. The project and partner' Facebook, Instagram, Youtube, blog page and Twitter to disseminate information on the project. The project website is actively using the project duration and is going to use for five years after the project. In addition to the project web site all partner have been used their own website to announce their activities to their followers

Results: The external communication effect has been maximized through visibility achieved by the regular use of the logo, website and social media channels of the partners. Partners have successfully created stories and reports on activities using digital channels - their websites and social media. Some partners have achieved successful networks engagement on Facebook based on communication about LitOUTer. They have brought home the messages about marine litter problems to environmentally minded users of the social media groups, mostly coastal inhabitants, marine sports enthusiasts, NGO activists and concerned citizens.

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4.1.2. Poster, Roll-up/Banner, T-shirts/Hats

Target public: General public, selected stakeholders and all interested groups

Communication purpose: To achieve maximum visibility of the project and serve for information and raising awareness

Results: The project posters and roll banners are part of the project's awareness materials. The planned numbers of posters and banners have been produced by all partners. All posters have been distributed to the partner stakeholder groups and have been used at project meetings, seminars, trainings. The roll-up/ banners have also been used with project events, workshops, symposium, and exhibitions. The posters and roll-up/banners have served the information purposes of raising public awareness, promoting the project to the main project stakeholders and the wider public. The t-shirts, hats, and bags are also part of the awareness materials and have been produced as planned. The produced materials were used during the physical/ face-to-face trainings organized. The roll-ups were used to ensure project visibility at face-to-face activities with beach operators, trainings with schools, workshop, open-air exhibition and during others conferences. The awareness materials have helped people focus on the issue of marine litter pollution, be involved in the project activities and understand the problem and their role and feel part of a group able to take action and perceive that other people are working toward a similar goal.

4.1.3. Cartoon for Children, Toys, Mermaid's Puzzle, Video for Marine Litter Pathways

Target public: small children, young people, education experts, some adults

Communication purpose: To educate children and young people on marine litter issues and to inform them about the harm of litter and especially plastics pollution to the marine environment and marine species. The interactive awareness materials aim to inform the young people about plastics pollution and the introduction of prevention, reuse and recycling. The materials aim to

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raise the awareness of parents who can be influenced by their children's attitudes, habits, messages about waste and marine litter prevention. Teachers, other educators and environmental activists can also use the awareness materials.

Type of events: Educational awareness activities, trainings, public events like exhibitions, coastal clean-up, and other environmental events, etc.

Key messages: We acted as role models to reduce marine litter. We should not leave any litter on the beach, on the coast, or on riverbanks for litter is harmful to marine inhabitants and people. We should use less plastics to make an economy from resources and protect the environment. Do not pollute the rivers and the sea, we all need a healthy and clean Black Sea for all.

Results: Target audience informed about marine litter pollution and aware of the harm by it

4.1.4. Brochures, Leaflets, Awareness Materials With Infographics

Target public: Adults, young people, experts, NGOs, decision makers, selected stakeholders

Communication purpose: To promote the project (in native languages and English) aims, objectives and project activities to the national and foreign audiences. To introduce readers to the marine litter issue and to good waste management practices

Key messages: Marine litter pollution is a significant regional issue that needs coordinated efforts, information and education as well as practical activities to reduce and abate pollution. It is necessary to encourage the adoption of good practices of marine waste management and reducing its impact on the environment and the sea among all target groups.

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Results: The publications have supported key messages from other activities in which the participants have been involved. They have served as reference for communication activities on the project. Produced publications such as brochures, leaflets, posters, origami game etc., have disseminated in various activities like training activities, visits, the open-air exhibition, symposium.

4.1.5. Awareness Meetings/Seminars

Target public: Local stakeholders (decision makers, students, children, local experts, adults, women, fishermen, decision makers, NGO)

Communication purpose: Raising awareness on marine litter issues and putting an emphasis on consumer habits and behaviour; Inform, educate and raise awareness of the local community about the issue of marine litter and its negative impacts on the local economy; To raise the awareness of the local community on their contribution to the issues and the resolution of marine litter issues; Encourage the local community to reduce waste / responsible disposal of waste in order to contribute to the reduction of marine litter

Key messages: Marine litter has negative impacts on the environment, human health and the local economy. Local communities must reduce waste and dispose waste properly to contribute to the reduction of marine litter. During the activities we used some simple communication messages: “We start from household habits in everyday life to learn more about care and protection of the Black Sea. We learn the alphabet of change - let us start with good practices at home and consumer choices. It’s time for a change for the Black Sea!”

Results: Trained stakeholders on marine litter issues; stakeholders encouraged to improve personal habits, reduce waste and dispose properly; stakeholders encouraged support marine litter reduction and circularity.

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4.1.6. Workshops

Target public: Partner teams and decision makers, experts, stakeholders.

Communication purpose: Raising awareness on cross border activities to reduce marine litter pollution; Inform, educate and raise awareness on regional aspects of marine litter pollution in the Black Sea; Raise the awareness of the local communities on good practices in partner countries

Key messages: marine litter is regional issue with trans-border effect on all littoral countries; Good practices can be implemented in each country to reduce the negative impacts of litter on the environment, human health and the local economy; Project achievements and cross border activities contribute to raising awareness on the need to solve the marine litter issue.

Results: Trained partner teams and stakeholders on marine litter issues and they exchanged good practices. Stakeholders were encouraged to adopt cross-border exchange good practices. The visibility of the project in media, local and national level succeeded. The stakeholders from partner Black Sea countries had positive feedback to share methods and good practices to address the marine litter pollution problem and its effects on the environment. The message has been successfully communicated by the local and national media.

4.1.7. International Symposium

Target public: Regional and international expert community, partner teams and stakeholders, local stakeholders and experts, scientist, university lecturers, students and NGOs.

Communication purpose: Provide international visibility to the project and its achievements; Raise awareness on marine litter pollution of the Black Sea and inform of international studies and monitoring activities and practices aimed at marine litter abatement

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Key messages: Marine litter is global issue and must be addressed jointly by the scientists of all countries and institutions; Marine litter pollution of the Black Sea is important regional issue and scientists and experts persist in their research and planning of activities addressing the issue; Local communities and governments in all coastal countries are concerned about the issue and start actions.

Results: International project visibility, international expert and scientific exchange were succeed. The visibility of the project in media, local, national, regional, and international were achieved. The symposium book and many publications were submitted.

4.1.8. Open Air Exhibition

Target public: Coastal communities, visitors to the coast and tourists

Communication purpose: To promote the project and inform the local communities of the project aim and objectives and the project activities; To involve local coastal communities in the dissemination of dissemination of awareness materials and in the exchange of good waste management practices

Key messages: Marine litter pollution is a significant regional issue that affects all coastal inhabitants. We must apply coordinated efforts, information and education as well as practical activities to reduce and abate pollution. It is necessary to encourage the adoption of good practices of waste management and marine litter prevention reducing its impact on the sea and the coastal environment.

Results: The open-air exhibitions have made the project visible to local coastal communities and have supported the dissemination of information about the project. Media reports and publications on websites have supported the communication effect of the exhibitions. It is realised that the selected areas such as the center of the cities/museum/park were very good places for the exhibition of the project. The number and type of visitors such as tourists, the elderly, and the

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disabled, increased because of easy-reach exhibition areas. Exhibition in the museum and exhibit longer than planned increased the number of visitors up to 30233.

4.1.9. Trainings for Students

Target public: Local schools on the coast, educators, NGOs involved in environmental education and awareness activities, parents, teachers.

Communication purpose: To inform and educate the young people about the issue of marine litter and its negative impacts on the marine environment, human health and the local economy; To raise the awareness of the students, educators and parents on the contribution of every person to waste formation and waste disposal; To inform of good practices on prevention of marine litter and marine litter reduction; To encourage responsible personal involvement in marine litter reduction.

Key messages: Marine litter pollution is a serious environmental issue affecting all seas and oceans. Marine litter is significant issue for all Black Sea countries. We must act together to inform and education the people and to manage properly our solid waste so that it does not enter the sea. Every one of us can help reduce pollution through responsible personal actions.

Results: Trained young people and educators, families involved and encouraged to be involved in project activities, to improve personal habits, reduce waste and dispose properly; raised stakeholder awareness on marine litter reduction and circularity.

4.1.10. Field Study

Target public: Local schoolchildren, educators, NGOs involved in environmental education and awareness activities, parents, public.

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Communication purpose: To inform and educate the young people and their families on the marine litter issue and to encourage responsible personal involvement in marine litter reduction; To raise awareness of the contribution of every member of society to the protection of the Black Sea; To introduce the target group to citizen science and promote science approach and the use of science in the solution of environmental issues.

Key messages: Marine litter pollution is a serious environmental issue for the Black Sea and all seas and oceans. Marine litter causes harm to the marine environment, health and safety and the local economy in all littoral countries. We must reduce pollution and act together to educate people and manage properly our solid waste so that it does not enter the sea. Every one of us can help reduce marine litter pollution in the Black Sea.

Results: Improved awareness and knowledge on the marine litter issue among young people and educators, families involved and encouraged to be involved in project activities, To improve personal habits, reduce waste and dispose properly; To raise stakeholder awareness on marine litter reduction and circularity; Project image and objectives made visible to local educators and communities. To clean up activities with decision-makers to demonstrate the importance of the activities in their eyes.

4.1.11. Training for Coastal Communities

Target public: Local people and decision makers, local coastal stakeholders such as students, women, fishermen, NGO, etc.

Communication purpose: Inform, educate and raise awareness of the local community about the issue of marine litter and its negative impacts on the marine and coastal environment, human health and safety and the local economy; To raise the awareness of the local community on their contribution to the resolution of marine litter issue; Encourage the local community to reduce

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waste especially plastic waste, recycle, reduce the use of goods with packaging and single use plastic items, etc. to contribute to the reduction of marine litter.

Key messages: We can act together to reduce marine litter and its negative impacts on the environment, human health and the local economy. Local communities must reduce waste and dispose waste properly to contribute to the reduction of marine litter.

Results: Local stakeholders have improved awareness on marine litter issues; Local stakeholders encouraged to improve personal habits, reduce waste and dispose properly; Stakeholders encouraged to reduce the use of plastics in households, holiday accommodation facilities, camping sites etc.; Stakeholders introduced to the marine litter reduction and circularity issue. Coastal communities of the partner countries informed about environmental litter problem in the leaflets and brochures of the project presenting the hierarchy of waste and initiated talks how they can be used by parents and families. The partners also used the clear communication messages in the well-known pledge "Help the Black Sea Now! " of the late Prof. L.D. Mee for discussion, step by step introduction to the actions and the involvement of participants.

4.1.12. Publications

Target public: Regional and international expert community, scientists, educators, students.

Communication purpose: To make the project and its activities visible to the international scientific and expert community; to provide background and baseline for further expert and scientific collaboration on Black Sea environmental issues and promote studies, activities and the exchange of good practices aimed at marine litter abatement

Key messages: Marine litter in the Black Sea is important regional issue and scientists and experts persist in their research and planning of activities addressing the issue; there is good basis for

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further efforts to involve scientists, experts, local communities and governments in all coastal countries.

Results: Improved international image and visibility of the project and participating experts; project results and activities promoted to international expert community; Publication provide support to sustainability of project achievements.

4.1.13. Publicity/Media reports

Target public: local and national public in all partner countries, target audience of local and national media, social media, visitors to project partner own websites and other communication channels

Communication purpose: To make the project and its activities visible to the public in partner countries and to international audiences; To promote project activities and raise awareness on marine litter issues in the Black Sea; To promote studies, activities and the exchange of good practices aimed at marine litter abatement.

Key messages: Marine litter in the Black Sea is important regional environmental issue with serious implications for marine biodiversity protection, safety, human health and the economy. Many stakeholder groups have roles and responsibilities to play in the solution of the trans-border issue. Coordinated and effective efforts must be implemented immediately to improve waste management and reduce marine litter pollution through prevention and reduction efforts, and when necessary, cleaning. Actions must involve scientists, experts, local communities and governments in all coastal countries.

Results: Improved visibility of the project on all levels to a very wide group of stakeholders and the general public; Raised awareness of the regional public on marine litter issues in the Black Sea and the protection of biodiversity.

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5. CHALLENGES OF COMMUNICATING EFFECTIVELY MESSAGES ON MARINE LITTER

The complexity of the marine litter pollution issue is the principal challenge to communication activities and the project LitOUTer is no exception. People need to be introduced to the process of waste management and to the pathways along which mismanaged waste reached the sea. The management of plastic waste is another specific challenge in view of the continuous growth of the use of plastics. The damage done by marine litter is yet another complex topic that has to be communicated to the target audience. Consequently, people from the coastal communities and all target groups identified by the project teams need to be involved and informed so that they understand the issue, feel concern and responsibility and be motivated to take action together with other people working to achieve a common goal.

The complexity of the issue has been addressed with a variety of activities suited to various groups, social roles, occupations and ages. The teams in the four partner countries have addressed stakeholders with different background, national characteristics, understanding and levels of experience. They have faced different perspectives of the actions required to achieve solutions. That has been achieved with careful selection of messages to target groups that would suit their specific understanding, sense of responsibility, and actions that will contribute to changes in personal behaviour.

The partner teams have successfully communicated details about sources of marine litter and facts about the long time of decomposition of litter items in the sea. In particular, fishing cooperatives as a target groups, successfully transmitted the need for avoiding pollution with abandoned fishing gears.

Marine litter can be an easily identified and visible problem to any beach goer. However, one challenge in communicating the scale of the problem is that most people cannot see marine litter

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on the seabed or floating on the surface, in the water column and even less when it is hardly visible or not visible with the naked eye as in the case with microplastics. The project teams have managed to inform the stakeholders about litter in places where it is not visible. That has been achieved through information awareness activities and materials, images, pictures, and through the demonstration of scientific data in the computer-based model of marine litter accumulation and distribution (Figure-2).

The partners have used simple and understandable messages to address the complexity of the issue - Don't pollute! Have a multiple use shopping bag! Reduce on single use items to save your money and help save resources. A few pledges to help the Black Sea have listed simply formulated activities for personal action all of them addressed at proper waste management. All partner teams have provided visual awareness materials, and have supported the visual information with simple messages and direct communication where possible to link the different social groups in each country and across borders.

Despite differences between people or stakeholder groups, the relation between threat and action has been successfully communicated in practical terms by the demonstration of good practices. The most successful communications have been achieved at workshops with demonstrations of proper waste disposal, waste and waste waters management and some cleaning activities to reduce marine litter pollution. When teams communicated threats to beachgoers, human health, coastal tourism, the marine environment, and marine organisms, they achieved effective communication. The teams provided guidance on how to reduce the threats and how to achieve direct or indirect influence.

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6. MEASURING ACHIEVEMENTS - INDICATORS AND EVALUATION

Evaluating communication in LitOUTer is important to assess the effectiveness and impact of communication efforts on the project outcomes. The communication activities in the project have successfully contributed to the achievement of the communication aim: To promote the image of the project and its goals and objectives to the main project stakeholders and the wider public, raising awareness of the marine litter issue in the Black Sea countries.

The indicators that are part of the guidelines can be used to measure the effectiveness of communication activities in contributing to the achievement of project results and objectives. The planned numbers of the indicators have been achieved by the LitOUTer project consortium (Annex Table-1).

Those communication items that do not have pre-determined targets (press-releases, media reports etc.) have been implemented regularly, in good numbers and by all partners, having covered all stages of the project implementation and key events and achievements. Partners have used both public communication channels and their own websites and social media. They have contributed successfully to the visibility of the project and awareness raising.

The impact of project communication activities on stakeholders has been reflected in the survey of stakeholder knowledge, attitudes, and behaviors related to the project. The project has contributed to the improvement of the knowledge of stakeholder groups who have learned to understand the aspects of the marine litter issues, identify locations, sources and pathways of marine litter, assess roles of polluters and assess the effectiveness of measures and activities aimed at marine litter reduction. In addition, the stakeholders, through self-assessment, have identified their own roles in the process of marine litter abatement. The communication activities have helped create a sense of personal responsibility for marine litter issues among all target

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groups. They have also helped to stress on the significance of support to public campaigns and activities associated with marine litter reduction.

Certain issues have emerged in the communication with communities on the coast, young people, teachers and NGOs. The concept of personal responsibility in individual waste management practices has been given plenty of attention throughout the project. Communication and training stressed on the necessary change in personal habits, proper waste disposal, reduction of waste, separate collection, economy of resources. People have generally showed concern about the state of the sea and the coastal environment and about marine litter pollution but they view waste management mainly as the obligation of the authorities, municipalities, public utilities companies. Separate waste collection is not applied effectively according to statistics. This is an issue associated in places with availability of facilities, system of management and public utilities. The concept of personal responsibility needs further attention and so does the public system of waste management which has to be based on the waste management hierarchy. Waste and marine litter reduction is still associated to a very large extent with cleaning activities, and end of pipe measures rather than prevention and reduction.

Being active in public on marine litter issues is not very popular in the region. The concept of addressing the authorities with issues and problems about waste management or participation in public activities related to marine litter reduction does not have immediate support among LitOUTer stakeholders and needs further attention

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7. CONCLUSIONS

Numerous stakeholders and experts in the Black Sea region, among them scientists, educators and NGOs are involved in environmental protection, raising awareness of the importance of nature and biodiversity conservation. As marine litter pollution continues to be one of the leading topics in all littoral countries, proper waste management, related to marine litter abatement, remains an important issue both on national and regional level.

In that context LitOUTer communication activities and the promotion of cross-border understanding and cooperation on regional environmental issues have contributed to strengthening the awareness among citizens that the solid waste issue must be approached effectively by all parties involved, especially those with responsibilities and roles to play in the process. Based on the existing legislation and programmes partner countries plan to implement improved waste management to introduce the circular approach, zero pollution, no net emissions and other policies addressing climate change and environmental degradation.

The LitOUTer project has brought societies in the region a step closer to improved understanding of marine litter pollution issue, the mechanisms behind it and the responsibilities of all that must be involved in the solution.

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ANNEX: INDICATORS FOR EVALUATION

Activities	Explanation	Numbers
Project logo	- # of types of uses (docs, web etc.)	Used over 12000 times All products produced in the project has logo
Project website	- # of months functioning - # of language - # of visits (viewers)	93 months (in total) 5 languages Over 12879 viewers
Social media	- # of news	Over 500 local and national news in all partner countries
Posters	- # of items produced - # of items distributed	600 posters were produced and distributed in the target areas
Roll-up/Banner	- # of produced - # of events using roll banners	21 roll-up/banners were used in over 190 activities
Cartoon for children	- # of places/locations of use - # of viewers	https://litouterproject.eu/videos/ 5 languages 1.4K Turkish 241 English
Toys	- # of toys produced	2000 pieces disseminated in the target areas
Mermaid's Puzzle	- # of puzzle distributed	10.000 pieces disseminated in the target areas (the questions and answers of the puzzles were translated in the partner languages (Five languages translation)
Video for marine litter pathways	- # of items produced - # of items distributed	https://www.youtube.com/watch?v=7q3ySfOnajQ One documentary video was seen over 20000 reviewer
T-shirts/Hats/Bags	- # of places/locations of use	T-shirt:1000 /Hat:150/ Bag:160 were disseminated in the target areas
Brochures/Leaflets	- # of items produced	

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	- # of items distributed	10.000 brochures/leaflets were disseminated in the target areas
Awareness materials/infographics	- # of items produced - # of items distributed	Plakets: 50/Origami cards:1500/Photos:500 were disseminated in the target areas
Awareness meetings/seminars	- # of events performed - # of participants involved	124 activity/3352 participants
Workshops	- # of held/# of participants	9 events/438 participants
International symposium	- # of participants - # of presentations - # of publications - # of media reports /coverage	331 participants/39 oral presentation/16 poster presentation
Open air exhibition	- #of participants involved	6 events/3450 visitors
Trainings for students	- # of events performed - # of participants involved	45 events/2963 participants
Field study	- # of events performed - # of participants involved	Over 15 events/720 participants
Publications incl. GCML BS	- # produced and disseminated	7 progress reports 1 Symposium abstract book 1 Communication guideline
Publicity/	- # of publications	KTU: https://litouterproject.eu/ 8 progress reports were produced from project activities. One symposium book submitted

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