

EFH-EG-3

Assessment of marine litter in the Egyptian Mediterranean coastline and proposed management options

Report of the workshop 'Assessment of marine litter in the Egyptian Mediterranean coastline' (under Task 1)

Version	Document Title	Author	Review and Clearance
1	Report of the workshop	Thomais Vlachogianni	Anis Ismail
	'Assessment of marine	Emad Adly	Michael Scoullos
	litter in the Egyptian	Essam Nada	
	Mediterranean coastline'		
	(under Task 1)		





THE SWIM AND H2020 SUPPORT MECHANISM PROJECT (2016-2019)

The SWIM and H2020 SM is a Regional Technical Support Program, funded by the European Commission, Directorate General (DG) NEAR (Neighborhood and Enlargement Negotiations), that includes the following Partner Countries (PCs): Algeria, Egypt, Israel, Jordan, Lebanon, Libya, Morocco, Palestine, [Syria] and Tunisia. However, in order to ensure the coherence and effectiveness of Union financing or to foster regional co-operation, eligibility of specific actions will be extended to the Western Balkan countries (Albania, Bosnia Herzegovina and Montenegro), Turkey and Mauritania. The Program is funded by the European Neighbourhood Instrument (ENI) South/Environment. It ensures the continuation of EU's regional support to ENP South countries in the fields of water management, marine pollution prevention and adds value to other important EU-funded regional programs in related fields, in particular the SWITCH-Med program, and the Clima South program, as well as to projects under the EU bilateral programming, where environment and water are identified as priority sectors for the EU cooperation. It complements and provides operational partnerships and links with the projects labelled by the Union for the Mediterranean, project preparation facilities in particular MESHIP phase II and with the next phase of the ENPI-SEIS project on environmental information systems, whereas its work plan will be coherent with, and supportive of, the Barcelona Convention and its Mediterranean Action Plan.

The overall objective of the Program is to contribute to reduced marine pollution and a more sustainable use of scarce water resources. The Technical Assistance services are grouped in 6 work packages: WP1. Expert facility, WP2. Peer-to-peer experience sharing and dialogue, WP3. Training activities, WP4. Communication and visibility, WP5. Capitalizing the lessons learnt, good practices and success stories and WP6. Support activities.





Acknowledgements:

Special thanks need to be directed to Ms. Heba Sharawy, H2020 Focal Point (Egyptian Ministry of Environment), Mr. Mohour Ibrahim, MEDPOL Focal Point (Egyptian Ministry of Environment) and Mr. Sameh Riad Ayoub, Marine Litter National Focal Point, (Egyptian Ministry of Environment) for their valuable contribution and support throughout the training.

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ABBREVIATIONS

EO	Ecological Objective	
H2020	Horizon 2020	
ICZM	Integrated Coastal Zone Management	
IMAP	Integrated Monitoring and Assessment Programme	
LBS	Land-Based Sources	
NAP	National Action Plan	
NGO	Non-Governmental Organization	
NKE	Non-Key Expert	
UNEP/MAP	United Nations Environment Programme/Mediterranean Action Plan	





1 GENERAL INTRODUCTION

Marine litter -any persistent, manufactured or processed solid material discarded, disposed of or abandoned in the marine and coastal environment- is globally acknowledged as a major societal challenge of our times due to its significant environmental, economic, social, political and cultural implications. Marine litter negatively impacts coastal and marine ecosystems and the services they provide, ultimately affecting people's livelihoods and well-being.

Marine litter related information in the Mediterranean, remains limited, inconsistent and fragmented, however it is widely accepted that it is one of the most affected seas by marine litter worldwide. Effective measures to tackle marine litter in the region are seriously hampered by the lack of reliable scientific data. Within this context the need for accurate, coherent and comparable scientific data on marine litter in the Mediterranean countries is evident in order to set priorities for action and address marine litter effectively, thus ensuring the sustainable management and use of the marine and coastal environment of the region.

Within the framework of the SWIM-H2020 SM Egypt has asked for an Expert Facility Activity (EFH-EG-3) in order to assess marine litter in the Egyptian Mediterranean coastline and come up with targeted management options. This activity will support the implementation in Egypt of the obligations and measures relevant to the Regional Plan for Marine Litter Management in the Mediterranean of the Barcelona Convention and will contribute to Integrated Coastal Zone Management (ICZM) within the framework of the implementation of the regional ICZM Protocol of the Barcelona Convention. More specifically, the action will support Egypt in: integrating marine litter measures into the LBS National Action Plan in line with Article 7 of the Regional Plan; assessing marine litter in the Egyptian Mediterranean coastline in line with Article 11 of the Regional Plan; designing a marine litter monitoring programme in line with Article 12 of the Regional Plan; supporting the implementation of Regional Plan through technical assistance and capacity building in line with Article 15 of the Regional Plan.

The assessment of marine litter in the Egyptian Mediterranean coastline and the proposed management options based on the results would trigger positive changes in the design and implementation of the relevant national institutional, policy and regulatory frameworks, which should incorporate marine litter prevention and reduction measures. Furthermore, it will strengthen the regional coherence and cooperation in approaches to marine pollution prevention and control, and sustainable waste management. The areas addressed/covered by the proposed activity include a study/assessment, technical assistance and capacity building.

The overall Activity entails the following tasks:

- Task 1: Carry out marine litter pilot surveys (including a workshop) on the Med Coast of Egypt
 along with a literature review focusing on strengthening the evidence base concerning marine litter
 and in particular plastics.
- Task 2: Compile a document with 'best' available techniques and methodologies for monitoring marine litter in the coastal and marine environment and short listing of best environmental practices for management of marine litter.





- Task 3: Carry out a literature review on the degradation process for plastics.
- Task 4: Review the socioeconomic implications of marine litter.

This workshop, held on 19-20 September 2017 in Alexandria, was carried out under Task 1. Together with the Egyptian Authorities (via the Horizon 2020 Focal Point) within this task, specific sampling sites for the marine litter monitoring on the Mediterranean coast will be selected, a core set of professionals will be supported on how to properly monitor marine litter on coasts and 3-4 marine litter monitoring surveys will be conducted. Once the task is completed marine litter datasets from the pilot monitoring surveys will be obtained; an assessment report will be elaborated on amounts, types, composition and sources of marine litter.

2 OBLECTIVES OF THE WORKSHOP

The overarching goal of the workshop was to train a core set of professionals to properly monitor marine litter on coasts. The workshop participants were briefly introduced to the theme of marine litter, its sources and impacts, as well as the main legislative framework to combat marine litter, namely the Barcelona Convention Regional Plan for Marine Litter Management in the Mediterranean. The participants gained an overview of the 'best' available techniques and methodologies for monitoring marine litter in the coastal and marine environment. Most importantly, they had the opportunity to get acquainted step-by-step with the methodology for monitoring marine macro-litter on beaches and gain hands-on experience on how to perform beach litter surveys. The participants surveyed two transects on the coastline of Alexandria and processed the respective data in order to obtain a snapshot of the marine litter density in the area and the potential main sources. Throughout the workshop emphasis was given to the practical implementation of the three marine litter indicators adopted within the Barcelona Convention Integrated Monitoring and Assessment Programme of the Mediterranean Sea and Coast and Related Assessment Criteria (IMAP – Decision IG.22/7).

- Common Indicator 22: Trends in the amount of litter washed ashore and/or deposited on coastlines (EO10);
- Common Indicator 23: Trends in the amount of litter in the water column including micro plastics and on the seafloor (EO10)
- Candidate Indicator 24: Trends in the amount of litter ingested by or entangling marine organisms focusing on selected mammals, marine birds, and marine turtles (EO10).





3 EXPECTED RESULTS OF THE EVENT

The expected out outcomes of the workshop were:

- Enhanced understanding of key issues (technical, environmental, economic, health, cultural and social) related to marine litter;
- Deepened knowledge on the Barcelona Convention Regional Plan for Marine Litter Management in the Mediterranean Acquiring and the three marine litter indicators adopted within the Barcelona Convention Integrated Monitoring and Assessment Programme of the Mediterranean Sea and Coast and Related Assessment Criteria (IMAP – Decision IG.22/7);
- Improved knowledge and understanding of appropriate marine litter monitoring schemes and methodologies;
- Strengthened capacities to monitor marine litter on beaches in a harmonized way and also enhanced skills to process the marine litter datasets and identify the marine litter sources.
- Strengthened implementation of the Barcelona Convention Regional Plan for Marine Litter Management in the Mediterranean.

The outcomes of this workshop will be instrumental in selecting sampling sites for marine litter monitoring on the Egyptian Mediterranean coast and in conducting the pilot marine litter monitoring surveys.

The training achieved to meet the above results by applying the approach described in the following sections.

4 APPROACH OF THE EVENT

The workshop comprised of a balanced mix of presentations, small group simulation exercises, field work and moderated discussion to foster an engaging learning experience. It was participatory and interactive. The workshop was facilitated by on-line video guidelines (http://mio-ecsde.org/project/mio-ecsdedefishgear-guidelines-on-how-to-monitor-marine-litter-on-beaches/) and an e-learning platform (http://www.envirolearning.net/index.php?ctg=lesson_info&courses_ID=26) on marine litter monitoring. At the end of the workshop the participants were provided with the training materials and other marine litter related resources so as to enhance their competences on how to design and carry out marine litter monitoring. These resources included the metadata templates and monitoring protocols for monitoring marine litter on beaches, marine litter assessment reports, guides with marine litter best practices measures, etc.





Figure 1. Map of the location where the beach survey was carried out.

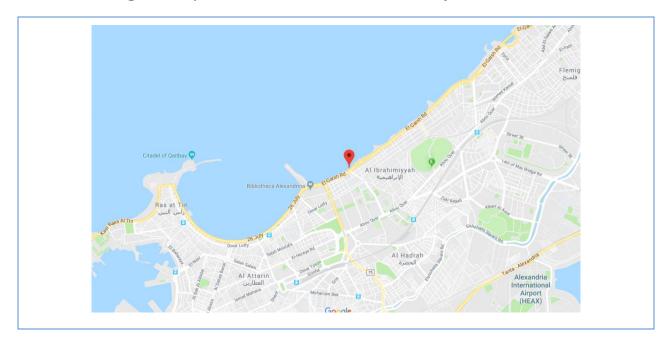


Figure 2. Group photo taken during the beach survey.



5 PARTICIPANTS PROFILE

In accordance with Terms of Reference of these activities, this workshop targeted the following stakeholders:

- The H2020 Focal Point;
- The UNEP/MAP MEDPOL Focal Point;
- Members of staff of the EEAA/Ministry of Environment and/or any other relevant agency that would be involved in designing the marine litter monitoring programme of Egypt as well as the marine litter measures;
- Representatives of local authorities in charge of keeping the beaches clean and/or managing waste and/or involved in designing/implementing the waste management plan of the Governorate;
- NGOs carrying out beach litter surveys or interested in performing marine litter monitoring
- Research institutes and academia working or interested in working on the issue of marine litter monitoring;
- · Representatives of any related marine litter monitoring related projects
- Management bodies of coastal and/or marine protected areas;
- Any other stakeholder (e.g. plastic producers associations, fishermen associations, etc.) interested in marine litter monitoring and marine litter management.

As seen also from the list of participants (see Annex 8.2), the event was attended by 30 participants (including the NKEs), out of which more than half were ministry representatives, 4 were NGO representatives, 4 participants were from academia and research institutes, one participant was from the media (see Figure 2). The participants were well balanced in terms of gender, with 53% participants being male and the 47% female.

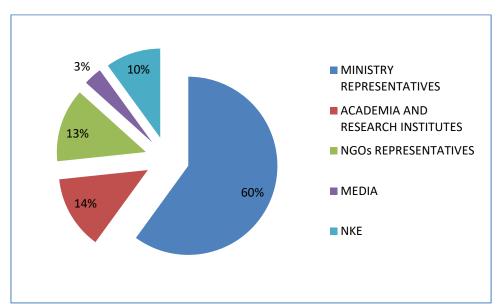


Figure 3. Participants profile.



43%

Male
Female

Figure 4. Gender statistics of the workshop participants.

6 EVALUATION OF THE EVENT

A. Feedback on organizational, administrative and planning issues of the event

A set of 7 criteria; A1-A7 (see table below) were assessed by the participants, using a qualitative description ranging between "Excellent" to "Poor", with an opportunity to provide suggestions for improvement. For the sake of comparison, the qualitative descriptions are given series numbers as follows: Excellent = 4; Good = 3; Average = 2; Poor = 1.

Table 1. Workshop rating results related to organizational, administrative and planning issues (score expressed using the scale of 4 and 100%).

ORG	GANISATIONAL, ADMINISTRATIVE AND PLANNING ISSUES	SCORE (MAX. 4)	SCORE (MAX. 100%)
A1	Efficient logistics: location of venue and interpretation	3,80	95%
A2	Smooth flow of programme, efficient handling of emerging needs and attentiveness to participants concerns	3,40	85%
А3	Presentations correspond and contribute to the planned objectives and are conducive to enhanced shared understanding and participation on addressed topics	3,45	86%
A4	Clarity, coverage and sufficiency of concepts, objectives, anticipated outputs and outcomes	3,50	88%
A5	The materials distributed were helpful	3,30	83%
A6	Efficient and Effective Facilitation	3,45	86%
A7	Overall rating of the event	3,40	85%

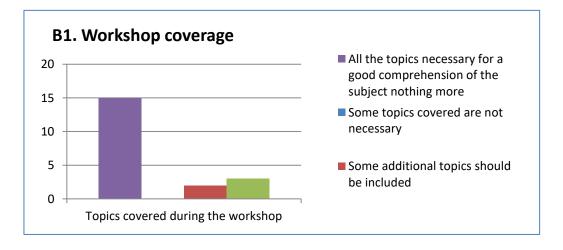


Three fourths the participants (75%) found all topics of the event necessary for a good comprehension of the subject, while the rest felt that some additional topics could be included. Regarding the level of difficulty according to the majority of the participants (70%) it was adequate, while some participants (15%) were of the view that it was elementary. Most of the participants felt that the length of the training was sufficient (70%) and 20% found the event's duration shorter than required, while the remaining participants didn't provide a reply.

Table 2. Participants' feedback on technical aspects of the event.

FEEDBACK ON TECHNICAL ASPECTS	No. of replies
B1. Coverage of the event	
All the topics necessary for a good comprehension of the subject	15
Some topics covered are not necessary	
Some additional topics should be included	2
No reply	3
Total Replies	20
B2. Level of difficulty	
Difficult	
Adequate	14
Elementary	3
No reply	3
Total Replies	20
B3. Length of the training	
Longer than needed	
Sufficient	14
Shorter than required	4
No reply	3
Total Replies	20

Figure 5. Participants' feedback on the event's coverage.



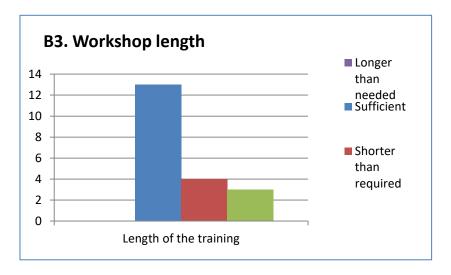


B2. Workshop difficulty

16
14
12
10
8
6
4
2
0
Level of difficulty

Figure 6. Participants' feedback on the event's difficulty.

Figure 7. Participants' feedback on the event's length.



Participants provided valuable insights on the event through a set of five open-ended questions (B4-B8). A summary of the most popular replies is provided in the table below. The participants indicated that among the most valuable things they learned during the workshop were the importance of carrying out marine litter surveys with the use of a harmonized methodology; the way to perform beach litter surveys; how marine litter items can be tracked back to their sources; and how to reduce the impacts of marine litter on the coastal and marine environment. Along the same line, the participants indicated that the event will assist them in detecting the sources of marine litter and thus facilitate the prioritization of measures; it will improve the quality of their work on the field; it provides a solid basis for launching marine litter monitoring activities in Egypt. Among the things they liked most in this workshop were the well-prepared presentations and videos shared; the group work and hands-on activity; meeting and networking with experts from different fields. The participants indicated that they gained good knowledge on the issue which they are committed to transfer to their colleagues through reports, presentations, discussions and the organization of trainings. Last but not least, they indicated that the length of the session for processing the marine litter data obtained from the field work should be increased while the issue of marine litter monitoring in the water column could have also been addressed in more detail.





Table 3. Participants replies to the open-ended questions.

Open-ended questions		Most popular replies	
B4	What is the most valuable thing you learned?	 How to monitor marine litter on beaches in a harmonized way; The existence of different 'mature' methodologies for monitoring marine litter in all marine compartments; The new knowledge shared on marine litter; The linkage of the marine litter measure and the ICZM framework; How marine litter items can be tracked back to their sources; How to reduce the impacts of marine litter on the coastal and marine environment. 	
В5	How do you think that the current event will assist you in your future work on the subject?	 It will facilitate efforts to detect the marine litter sources and subsequently guide the identification of targeted measures; It provides a solid basis for launching marine litter monitoring activities in Egypt; It will improve the quality of the work performed on the field. 	
В6	Please indicate whether (and how) you could transfer part of the experience gained from the event to your colleagues in your country.	 Share the presentations of the event; Report; Presentation; Discussion with colleagues; Organize a training course for colleagues; Carry out a beach survey with colleagues; 	
В7	What did you like most about this event?	 The well-elaborated presentations and the videos shared; Meeting and networking with experts from different fields; Good experts; The hands-on activity at the beach; The group-work sessions; It was well organized. 	
В8	What needs to be improved?	 To address in more detail also the issue of marine litter monitoring in the water column; To make more beach surveys in other locations; To allocate more time for processing the marine litter data obtained from the field work. 	





B. Remarks by the trainer

A set of 9 criteria; C1-C9 (see table below) were used by the NKEs in order assess the impact of the event. Overall, the participants were very active during the interactive sessions, engaged with the topics and their contributions to the discussions were very extensive and valuable. The planned objectives of the event were achieved to a large extent and participants gained a deepened understanding of appropriate marine litter monitoring schemes and methodologies, including how to monitor marine litter on beaches in a harmonized way. In general the event ran smoothly; the presentations, breakout sessions and field work were well appreciated; however more time was needed for processing the beach litter data obtained from the beach litter survey. Despite the fact that the SWIM-H2020 SM marine litter expert carried out the whole workshop via skype with the on-the-spot support of two NKEs this seems that it didn't affect the quality of the training.

Table 4. The criteria used by the NKEs to assess the impact of the event.

C1	Efficient and effective performance and interaction by participants
C2	Efficient and effective cooperation and team spirit
C3	Level of achievement of planned objectives
C4	Did the event contribute to helping participants practice skills or gain knowledge related to course concepts
C 5	What worked well during the event
C6	What didn't work well and why
C7	What components/concepts did participants seem to understand well
C8	Were there any components/concepts that participants appeared to not understand
C9	What aspects of the event could be improved and what to be kept

7 OVERALL ASSESSMENT & CONCLUSIONS

The training evaluation received overall satisfactory notes. Most appreciated aspect was the organizational support (average: 3,80 or 95%). The second highest value (average: 3,50 or 88%) was attributed to the clarity, coverage and sufficiency of concepts, objectives, anticipated outputs and outcomes, thus testifying how the planned objectives were fully reached. Participants obtained an enhanced understanding of key issues (technical, environmental, economic, health, cultural and social) related to marine litter; deepened their knowledge on the Barcelona Convention Regional Plan for Marine Litter Management in the Mediterranean; improved their knowledge and understanding of appropriate marine litter monitoring schemes and methodologies and strengthened their capacities to monitor marine litter on beaches in a harmonized way; enhanced their skills to process the marine litter datasets and identify the marine litter sources. The quality of the workshop's presentation and then efficient and effective facilitation highly appreciated too (average: 3,45 or 86%). The "Overall rating of the event" was on average 3,40 or 85%). Participants expressed their satisfaction about the field work, the group work and the opportunity to interact with experts from other fields, well-prepared and clear presentations. In terms of the things that need to be improved, very few participants (2-3) indicated that more beach surveys should have been planned in other locations and that more time could have been allocated for processing the marine litter data obtained from the field work.





8 ANNEXES

8.1. AGENDA OF THE WORKSHOP

19 September 2017

Time	Session	Work programme	Speaker(s)
09.30-10.00	Welcome	Welcoming remarks Agenda overview Ice breaker	Ms. Heba Sharawy, H2020 Focal Point, EEAA/Ministry of Environment Dr. Emad Adly, SMIM-H2020 SM stakeholder engagement expert
		ioc broaker	Dr. Thomais Vlachogianni, SWIM- H2020 SM/ MIO-ECSDE marine litter expert
		Brief overview of the SWIM- H2020 SM	Dr. Emad Adly, SMIM-H2020 SM stakeholder engagement expert
		The H2020 Initiative for a Cleaner Mediterranean: achievements in Egypt	Ms. Heba Sharawy, H2020 Focal Point, EEAA/Ministry of Environment
		during phase IIMEDPOL activities on	Dr. Mouhor Ibrahim, UNEP/MAP MEDPOL Focal Point
10.00-11.00	Introduction	marine litter in the Mediterranean	Dr. Sameh Riad, Project Focal Point on marine litter
		 Marine litter activities in Egypt 	Dr. Thomais Vlachogianni, SWIM- H2020 SM/MIO-ECSDE marine litter expert
		 Introduction to the Expert Facility Activity 'Assessment of marine litter in the Egyptian Mediterranean coastline and proposed management options' 	
11.00-11.30	Coffee break		
11.30-13.00	Monitoring marine litter	Overview of 'best' available techniques and methodologies for monitoring marine litter in the coastal and marine environment	Dr. Thomais Vlachogianni, SWIM- H2020 SM/MIO-ECSDE marine litter expert
13.00-14.00	Lunch break		
14.00-15.30	Monitoring and assessment of marine litter on beaches	Methodology for monitoring marine litter on beaches and assessing marine litter amounts, composition and sources	Dr. Thomais Vlachogianni, SWIM- H2020 SM/MIO-ECSDE marine litter expert
15.30-16.00	Coffee break		





16.00-17.00	Monitoring and assessment of marine litter on beaches (continued)	Introduction to the field work on beach litter surveys	Dr. Thomais Vlachogianni, SWIM- H2020 SM/MIO-ECSDE marine litter expert
17.00-17.30	Wrap up	Reflections & concluding remarks	All

20 September 2017

Time	Session	Work programme	Speaker(s)
09.00-09.15	Welcome	Brief introduction to the field work	Dr. Thomais Vlachogianni, SWIM- H2020 SM/MIO-ECSDE marine litter expert
09.15-13.00	Monitoring marine litter on beaches	Field surveys in group work	Dr. Thomais Vlachogianni, SWIM- H2020 SM/MIO-ECSDE marine litter expert Mr. Essam Nada, SWIM-H2020 SM, solid waste expert
13.00-14.00	Lunch break		
14.00-15.30	Monitoring marine litter on beaches (continued)	Results analysis/simulation exercise from field work in group work	Dr. Thomais Vlachogianni, SWIM- H2020 SM/MIO-ECSDE marine litter expert Mr. Essam Nada, SWIM-H2020 SM, solid waste expert
15.30-16.00	Wrap up and closure	Reflections & concluding remarks, certificates, evaluation	All





8.2. LIST OF PARTICIPANTS OF THE WORKSHOP

Ms. Shaimaa ABBASS Environmental Researcher EEAA Ms. Yosra ABD EL AZIZ Director of petroleum & industrial crisis management EEAA Ms. Heba ABD EL MOATY Coastal Zone Manager EEAA (Alexandria) Mr. Mohamed Hussein ABD EL MONIEM Project Manager Arab Office for Youth and Environment Mr. Emad ADLY Stakeholder Engagement Expert Engagement Expert Engagement Expert Engagement Expert Project Focal Point on Marine Litter SWIM-H2020 SM Ms. Enaam BAKR Director of waste and waste water dpt EEAA Mr. Aly EL BAROUDY Journalist Egyptian Sustainable Development Forum Mr. Aly EL YAMANY Project manager Egyptian Sustainable Development Forum Mr. Mohamed Gamal EL-DIN HASANEIN Coastal Zone Manager EEAA (Tanta) Mr. Sayed Moustafa EL SAYED Water quality control dpt EEAA Ms. Eman HELMY Chemist at water laboratory EEAA Ms. Mohour IBRAHIM HASSAN		Name	Surname	Position	Organization
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8.3. LIST OF RESOURCES SHARED

- Regional Plan on Marine Litter Management in the Mediterranean in the Framework of Article 15 of the Land Based Sources Protocol (Decision IG.21/7)
- MEDPOL Beach Litter Survey Form (UNEP(DEPI)/MED WG.439/20/L.1)
- The UNEP/MAP Marine Litter Assessment in the Mediterranean
- The UNEP-MAP Regional Survey on abandoned, lost and discarded fishing gear & ghost nets
- The MSFD TGML Report on Harm caused by Marine Litter
- The MSFD TGML Report on Identifying Sources of Marine Litter
- The MSFD TGML Report on Monitoring of Marine Litter in European Seas
- The IPA-Adriatic DeFishGear Marine Litter Assessment in the Adriatic and Ionian Seas
- The IPA-Adriatic DeFishGear Marine Litter Socio-Economic Implications Report
- The IPA-Adriatic DeFishGear Monitoring Methodology for Marine Litter on Beaches
- The MARLISCO Marine Litter Best Practice Guide (in Arabic)
- The MARLISCO Educational Material 'Know, Feel, Act! To Stop Marine Litter
- The MARLISCO Targeted Brochure 'Stopping Marine Litter Together'
- The MARLISCO Guide 'How to Communicate Marine Litter with Stakeholders

