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Meeting of the Ecosystem Approach Correspondence Group on Marine Litter Monitoring

Madrid, Spain, 28 February – 2 March 2017

**Agenda item 6: Marine Litter Metadata Templates and Monitoring Protocols**

**State of Play of Key Marine Litter Information Systems, Databases, Reports and Initiatives**

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## Table of Contents

<b>Introduction</b> .....	1
<b>Need for establishing coordinated Marine Litter Databases</b> .....	1
<b>Data and Metadata Reporting</b> .....	2
<b>Marine Litter Databases, Information Systems, Reports and Initiatives</b> .....	2

## Introduction

1. Data collection for marine litter is rapidly growing at regional level in the Mediterranean. The fact that marine litter is high in the national, regional, and global agendas from policy and science aspects, makes more and more funding opportunities available to support initiatives and projects resulting in new knowledge (i.e. data generation) on marine litter. Taking also into account the necessity in expanding the monitoring on marine litter at regional level, this will lead in significant data generation and flow which needs to be effectively and efficiently managed. Well-managed data should be stored in the right place (i.e. database), available at the right time (immediate reaction), in the right format (validated, standardized, data is made usable) and should be available for all interested users (usage governed).
2. Following the update/revision of the existing national monitoring programmes of the Contracting Parties according to the Integrated Monitoring and Assessment Programme (IMAP) Assessment Criteria, a need to report quality assured data on marine litter emerges. The data should be reported following a common regional monitoring reporting template to suit a corresponding regional database. In that respect, the Secretariat has prepared the present document presenting the state of play of existing marine litter databases and the corresponding data and metadata reporting templates to facilitate the development of the relates IMAP reporting templates on marine litter.

## Need for establishing coordinated Marine Litter Databases

3. The development of dedicated databases on marine litter is highly desired and such initiatives should be promoted at regional level. The past year several attempts have been done by projects and initiatives to develop corresponding marine litter databases. The IPA-Adriatic DeFishGear<sup>1</sup> project, the European Environment Agency (EEA) Marine LitterWatch<sup>2</sup> (MLW) smartphone application, the MARLISCO project<sup>3</sup>, and the International Bottom Trawl Surveys in the Mediterranean (MEDITS)<sup>4</sup> project are some of the examples of the developed databases on marine litter. Nowadays, an initiative from EMODNet Chemistry to collect and gather existing marine litter data, is taking place. Good examples are also found through the Regional Seas Convention.
4. The OSPAR Commission for protecting and conserving the North-East Atlantic and its recourses has developed a good example of a regional database on beach marine litter<sup>5</sup>. The OSPAR beach litter database stores marine litter data collected on references beaches using the standardized OSPAR beach litter monitoring guidelines. The online database has been developed to manage that data and allow it to be interrogated at the regional, sub-regional and beach level.
5. Existing databases are geo-referenced in order to spatially illustrate the collected information on marine litter types, amounts, abundance and distribution. Databases should be user-friendly and user-governed so that scientists, policy makers and all interested stakeholders may access them and take the corresponding information they are interested for. The databases should serve as a mechanism for the effective management of the collected data and information, ensure proper data flow, to better drive science-judgment and facilitate decision and policy making at local, national and regional level.

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<sup>1</sup><http://defishgear.izvrs.si/PassAuth/AutoAuth.aspx?ReturnUrl=/defishgear>

<sup>2</sup>[http://www.eea.europa.eu/themes/coast\\_sea/marine-litterwatch/data-and-results/marine-litterwatch-data-viewer-1](http://www.eea.europa.eu/themes/coast_sea/marine-litterwatch/data-and-results/marine-litterwatch-data-viewer-1)

<sup>3</sup><http://www.marlisco.eu/marine-litter-database.el.html>

<sup>4</sup> [http://www.sibm.it/MEDITS%202011/docs/Medits\\_Handbook\\_2016\\_version\\_8\\_042016.pdf](http://www.sibm.it/MEDITS%202011/docs/Medits_Handbook_2016_version_8_042016.pdf)

<sup>5</sup> <http://www.mcsuk.org/ospar/>

## Data and Metadata Reporting

6. A significant problem, which still remains, is the submission of quality assured and quality controlled data and metadata by the data owners into the corresponding databases and information systems. Databases and information systems should be properly designed and user-governed to suit for purpose (i.e. science/academia, policy makers, society, etc.).

7. Metadata is a very important aspect that should be properly addressed while designed a marine litter database and/or an information system. Metadata is data that describes other data, summarizing basic information about data, which can then make findings and working with data much easier. Having the ability to filter data through metadata makes it much easier for someone to locate a specific aspect, in particular for marine litter. The value of metadata lies in its ability to more efficiently classify and organize information, as well as to yield deeper insight into the submitted data providing more intelligence and higher quality information to fuel big data initiatives, automation, compliance, data sharing, collaboration and more.

## Marine Litter Databases, Information Systems, Reports and Initiatives

8. Nowadays several initiatives (project, Regional Seas, etc.) exist in developing marine litter databases, information system, and related reports, summarized into the following table:

Developer	Description	Link
DeFishGear Project	<p>Marine litter data and metadata are stored for beach (macro and micro), biota (macro and micro), fishing gear, floating (macro and micro), seafloor (macro and micro), and on shallow water marine litter.</p> <p>The following reports are provided supplementary to the data owner and/or database user:</p> <ul style="list-style-type: none"> <li>- Data reporting templates – User Manual;</li> <li>- DeFishGear WEB GIS information system User manual</li> </ul> <p>Reporting data and metadata templates have been developed for: beach (macro and micro), biota (macro and micro), fishing gear, floating (macro and micro), seafloor (macro and micro), and on shallow water marine litter.</p> <p>Four different user profiles: i) Public user; ii) Basic user; iii) Advanced user; iv) Administrator.</p>	<a href="http://defishgear.izvrs.si/defishgear">http://defishgear.izvrs.si/defishgear</a>
MEDITS cruises	<p>Marine litter data and metadata are stored for seafloor marine litter in an R-routine environment.</p> <p>Standard numerical outputs and maps are generated to facilitate the data/owners and/or users:</p> <ul style="list-style-type: none"> <li>- Number and percentage of hauls positive to litter by category and sub-category;</li> <li>- Percentage of litter by category by GSA (from mass indices);</li> <li>- Standardized indices (N/km<sup>2</sup> and N/h; kg/km<sup>2</sup> and kg/h) for each category and subcategory;</li> <li>- Stratified overall mean of relevant variables with CV for each category and sub-category by depth macro-strata: 10-800 m; 10-200 m and 200-800 m.</li> </ul>	<a href="http://www.sibm.it/MEDITS%202011/docs/Medits_Handbook_2016_version_8_042016.pdf">http://www.sibm.it/MEDITS%202011/docs/Medits_Handbook_2016_version_8_042016.pdf</a>
OSPAR	<p>Marine litter data and metadata templates are available for beach marine litter (<a href="http://www.ospar.org/ospar-data/10-02e_beachlitter%20guideline_english%20only.pdf">http://www.ospar.org/ospar-data/10-02e_beachlitter%20guideline_english%20only.pdf</a>).</p>	<a href="http://www.mcsuk.org/ospar/">http://www.mcsuk.org/ospar/</a>

Developer	Description	Link
	<p>A comprehensive and detailed marine litter beach questionnaire is developed to accompany the marine litter monitoring survey form for marine litter found along the coasts of the OSPAR maritime area.</p> <p>The OSPAR beach litter database has been developed to store marine litter data collected on reference beaches using the standardized OSPAR beach litter monitoring guidelines. The online database has been developed to manage that data and allow it to be interrogated at the regional, sub-regional and beach level.</p>	<p><a href="http://www.ospar.org/ospar-data/10-02e_beachlitter%20guideline_english%20only.pdf">http://www.ospar.org/ospar-data/10-02e_beachlitter%20guideline_english%20only.pdf</a></p>
<p>Marine LitterWatch (MLW) Smartphone Application</p>	<p>The Marine LitterWatch (MLW) data viewer has been developed. The MLW data viewer provides a map of beach litter data collection events organised by MLW communities. It also provides overview graphs and tables of both the data collected and community engagement.</p> <p>Data collected by the MLW communities is made available as soon as it enters the EEA database without any further manual quality control. The users submitting the data are responsible for its accuracy. At present, the MLW data represents the effort made by the communities collecting it and is therefore illustrative of the amount and type of items found on the surveyed beaches. Additional handling is required for using this data for further statistical purposes. The database used in the map and graphs of the MLW data viewer is dynamically updated every time communities submit data.</p> <p>A download service is provided by EEA offering bulk download of Marine LitterWatch data. Data can be filtered by community (optional), date (yyyy-mm-dd) and geographical coordinates (optional).</p>	<p><a href="http://www.eea.europa.eu/themes/coast_sea/marine-litterwatch/data-and-results/marine-litterwatch-data-viewer-1">http://www.eea.europa.eu/themes/coast_sea/marine-litterwatch/data-and-results/marine-litterwatch-data-viewer-1</a></p>
<p>MARLISCO project</p>	<p>The MARLISCO project is offering an online database with available data on beach clean-ups for the follow countries: Cyprus, Italy, and Slovenia. Data and results can be filtered according to Country, Place and Date.</p>	<p><a href="http://www.marlisco.eu/marine-litter-database.el.html">http://www.marlisco.eu/marine-litter-database.el.html</a></p>
<p>EMODNet Chemistry</p>	<p>EMODNet Chemistry is undertaking an initiative to collect existing data on marine litter deriving from EU funded projects. Work is still in progress.</p>	<p><a href="http://www.emodnet-chemistry.eu/">http://www.emodnet-chemistry.eu/</a></p>
<p>NOAA Marine Debris Tracker</p>	<p>The Marine Debris Tracker mobile application is a joint initiative between the NOAA Marine Debris Program and the Southeast Atlantic Marine Debris Initiative (SEA-MDI). The tracker app offers the opportunity to users to get involved in local data collection. The app records the debris location through GPS, and data can be viewed on the phone and/or through the Marine Debris Tracker. Login information is required to access the data, and information can be filtered according to different marine litter campaigns and initiatives, date, keywords and different marine litter types (plastic, metal, glass, paper and lumber, cloth, fishing gear, rubber and other).</p>	<p><a href="http://www.marinedebris.engr.uga.edu/nwmap/">http://www.marinedebris.engr.uga.edu/nwmap/</a></p>

The UN Environment/Mediterranean Action Plan has based its proposal for developing data and metadata reporting templates for seafloor marine litter, on the MEDITS reporting templates, elements and related features, while the corresponding proposal for developing data and metadata reporting templates for beach marine litter, was based on the OSPAR and the DeFishGear project reporting templates.