

# **MSFD Technical Group on Marine Litter, Annual Meeting 2017**

**Gdansk, Poland on 8. + 9.6.2017**

## **Meeting report**

### **Opening**

The 11th meeting of the Technical Group on Marine Litter (TG ML) was held on 8.+ 9.6.2017 in Gdansk, Poland. The 33 participants represented DG ENV, DG JRC, EEA, EMODNET, 14 EU Member States (Belgium, Denmark, Finland, France, Germany, Ireland, Italy, Lithuania, Netherlands, Poland, Romania, Slovenia, Spain, Sweden), RSCs (OSPAR, HELCOM Secretariat and Black Sea Commission), NGOs (Surfrider Foundation, AWARE, MCS, MIO-ECSDE, Keep Sweden Tidy), Plymouth University, and NOAA (USA).

After a kind welcome by Kalina Burakowska (IMGW, Poland), Stefanie Werner (group co-chair, UBA, Germany) opened the meeting, followed by a tour de table.

### **MSFD D10 – IMPLEMENTATION OF COM DEC 2017/848/EU, PLASTICS STRATEGY, PRF REVIEW, INTERNATIONAL LITTER ACTIVITIES**

Michail Papadoyannakis (DG ENV) briefed the group on EU policy responses to litter pollution (regulations and financing of projects) and the latest status of the MSFD implementation for D10 (Marine Litter), including the new COM DEC 2017/848/EU.

Main change on D10 in the new COM DEC 2017/848/EU is the assessment of amounts of litter in relation to thresholds, instead of trends. MSs will have to establish thresholds and decide on integration methods to assess if GES is achieved. Other changes include the introduction of primary and secondary criteria and additional considerations of other impacts.

A list of existing commitments was presented, highlighting the Circular Economy Package and the Strategy on Plastics, where a proposition for an EU reduction target on Marine Litter of 30% by 2025 is discussed "The Circular Economy Action Plan refers to an aspirational 30% reduction target for litter items found on beaches and for fishing gear found at sea... ". Also details about studies on microplastics, reuse and recycling of plastics, and its links to marine litter where mentioned. Further, the Revision of the Port Reception Facilities Directive ('PRFD', 2000/59/EC) is mentioned in the Circular Economy Package as one of the tools for delivering reductions on marine litter (currently, some MSs have included PRFD measures in their MSFD PoMs).

The MSFD Common Implementation Strategy Work programme 2016 – 2019 was detailed, including the TG ML timelines and deliverables (highlighting the importance of baselines and the need to establish thresholds to allow monitoring progress toward goals):

- Threshold values as provided for under the revised GES Decision (2018, advice)
- Baselines for quantities of litter (2017, report and recommendations)
- Monitoring guidance, including harmonised protocols for assessments (2018, report and recommendations)
- Guidance on international developments, as appropriate (Ongoing, advice)
- Finalisation of four technical reports (2017)

- Technical report summarising the different policy-relevant issues such as the assessment of quantities, pathways, accumulation of marine litter, microplastics (2017)

A review was done on international activities: G7 Action Plan, G20 and UNEP.

Next steps and challenges for the implementation of MSFD D10 include the following:

- Analysis of MS Programmes of Measures
- Determining baselines for assessment of environmental status and for monitoring progress towards reduction and thresholds for the implementation of the new GES Decision
- Addressing primary microplastics from products
- Support implementation of the 30% target by identification and reduction of most frequently found items on beaches
- Detailed investigation of aquaculture and waste from fishing activities
- Review of the WFD and REFIT of UWWTD
- Assessing of global governance for marine litter (UNEA-3, December 2017)

Main comments:

- How does the 30% reduction target fit with the amounts/trends issue? It will refer to top beach litter items and fishing gear, but first a baseline should be defined.
- How to assess fishing gear floating at sea?
- Issue on combination of reductions and thresholds: more work necessary to establish litter threshold values.

### **TG Marine Litter work program 2016-2019**

Georg Hanke (group co-chair, DG JRC) provided the background for the agenda of the meeting, group's current and future work items. He briefed the participants on the plan for the MSFD Common Implementation Strategy (CIS) 2016-2019 Mandate for the TG Marine Litter. The need for litter reduction and increasing attention from Commission Services on Marine Litter work was mentioned.

Recently, TG ML has been 'rebooted' by updating the community and providing a new communication platform (WIKI). The role of the new COM DEC 2017/848/EU was emphasised and a list of work program topics was presented:

- Overview on research projects and progress
- Litter baselines
- Monitoring harmonization (including data quality)
- Data management
- Programs of Measures
- Thresholds
- International (beyond EU) collaboration
- Litter categories
- Top Litter items
- Riverine Litter

## **TG Marine Litter WIKI collaboration platform**

Anna Addamo (DG JRC) gave a short introduction to participants on the structure of the TG ML WIKI space and its main functionalities in order to facilitate the discussion to follow on the 2<sup>nd</sup> day of the meeting, inviting the group to provide feedback and proposals for setting-up and use of the wiki platform.

## **Regional Sea Convention activities**

### **OSPAR**

Stefanie Werner (group co-chair, UBA, Germany) represented OSPAR and shared information on the OSPAR Strategies (organized by working groups), indicating that the North East Atlantic Strategy with the Joint Assessment & Monitoring Programme (JAMP) has the same aim as the MSFD with the COM DEC.

Currently, OSPAR is finalizing the 2017 Intermediate Assessment on the state of the marine environment, in June 2017 approved for publication, which includes results on marine litter:

For ML three common indicators have been agreed: beach litter, plastic particles in fulmar stomachs and seabed litter (IBTS Programme). Ingested litter (micro particles) in turtle stomachs is a candidate indicator, further indicators under development are microplastics in sediment, ingestion in other biota and entanglement. The OSPAR Marine Litter Regional Action Plan (RAP) has a section with common actions to be implemented jointly by Contracting Parties and a section on national actions where information exchange is envisaged. It distinguishes actions to combat sea-based as well as land-based sources, removal actions and actions for education and outreach. As an example for implementation the actions with regard to primary microplastics were introduced. An evidence base was generated, assessing sources, pathways, concentrations and impacts of land-based microplastics. Dialogue with cosmetic company was established in April 2015 and March 2017 for micro plastics reduction or elimination in cosmetics. An 82% reduction (2012-2015, information from Cosmeticseurope) has been achieved so far, all rinse-off and leave-on products will be considered now. The next primary microplastic category to be addressed are pre-production pellets. A background document is under development.

### **HELCOM**

Marta Ruiz (HELCOM Secretariat) introduced the holistic assessment (HOLAS II) and implementation of the HELCOM RAP ML. HELCOM holistic assessment 2017 will include a descriptive section on Marine Litter. The regional assessment of marine litter considers beach litter, seafloor litter (BITS data) and micro litter, being beach litter and litter on the seafloor pre-core indicators. The process for the implementation of the RAP ML was described. The process is facilitated by the HELCOM Experts Network on Marine Litter (ToR 2015-2018). The EU co-funded SPICE project supports the work on Marine Litter.

The HELCOM RAP ML includes regional actions to improve waste prevention & management; address top items (micro particles, sewage related litter including sanitary waste, plastic bags, and bottles and containers); remediation and removal actions; shipping related waste; and waste related to fishing & aquaculture.

## **BARCELONA CONVENTION**

François Galgani (group chair, IFREMER, France), on behalf of UNEP/MAP, presented the Regional Plan for Marine Litter Management in the Mediterranean (RP ML): Reductions measures and Monitoring. The Integrated Monitoring and Assessment Programme and related Assessment Criteria (IMAP) 2016 report includes information on Marine Litter common indicators. The IMAP Common Indicator Fact Sheets for Pollution and Marine Litter report (WG.439/12) will support implementation in the national monitoring programs. Additionally, the Quality Status Report (QSR) Fact Sheet Assessment for Pollution and Marine Litter (WG.439/13) will include the development of interactive tools for dissemination. Unfortunately, only a few countries provided data for the preparation of the QSR 2017.

Information was provided about the Reorganization and implementation of the MEDPOL data base, which includes Meta Data Templates for Pollution and Marine Litter (WG.439/14).

UNEP/MAP will support the BSC to coordinate/align monitoring plans with MEDPOL.

## **BUCHAREST CONVENTION**

Elena Stoica (NIMRD, Romania), on behalf of the Black Sea Commission BSC, presented the Strategic Action Plan for the Environmental Protection and Rehabilitation of the Black Sea (BS SAP), latest version adopted in 2009, mentioning the activities related with Marine Litter. In 2015, the Advisory Group on Control of Pollution from Land Based Sources (LBS AG) and the Pollution Monitoring and Assessment Advisory Group (PMA AG) recommended to use the EU Marine Litter Guidelines for assessment of Marine Litter in the Black Sea region.

In October 2016, the BSC adopted the Black Sea Integrated Monitoring and Assessment Program (BSIMAP) 2017-2022. The annexes to this document are being further refined and adjusted by the Advisory Groups. Also, Regional Action Plan on Marine Litter Management in the Black Sea and Guidelines on Marine Litter (based on EU guidance – TG ML 2013) were drafted by experts and are now being revised against concrete actions (considering works from other RSCs and projects such as EMBLAS II), before being presented for adoption by BSC.

Collaboration between UNEP/MAP and the BSC is taking place through the Marine Litter *MED project*, including support to develop a Marine Litter Monitoring Programme for the Black Sea.

DG NEAR funded EMBLAS II project (Participants: Georgia, , Russian Federation and Ukraine ) with BSC and JRC organised a Marine Litter workshop in 2016 attended by the 6 BS countries. Litter monitoring activities in rivers and at sea, supported by JRC, have been conducted, the full report will soon be published.

EEA informed that the LitterWatch has expanded its beach litter data collection in the BS.

## **RESEARCH PROJECTS ON MARINE LITTER – AN OVERVIEW**

Anna Addamo (JRC) provided an overview of past and ongoing research projects related to marine litter. The project list has taken also projects into account, which did not have marine litter as only focus (e.g. STAGES, COLUMBUS, Marine Knowledge Gate, etc.). The objective is to facilitate information and knowledge accessibility, as currently research projects outcomes can be difficult to find and use. The project list is to be made publicly available and be an important resource for MSFD TG ML and funding agencies. More than 60 projects have been already identified and information is

compiled in an excel file. TG ML members are expected to contribute by revising the existing list of projects (and related details) and to include additional projects, also those which are nationally funded. Comments to the template can be made through WIKI, where a specific discussion forum will be opened. Thomais Vlachogianni (XX) provided information on SWIM H2020 SM as an additional source of projects outcomes information which should be included.

There is a need to discuss whether such a list will also be useful for projects which aim at supporting measures against marine litter rather than providing new scientific knowledge.

Next steps: Further to the already available information on research projects, JRC will distribute a template in order to receive additional information for all marine national and international research projects on marine litter. Deadline for comments on template format is the 30.6.2017. Deadline for additional information 15.9.2017. A continuous update afterwards is suggested.

## **REPORTS FROM SELECTED MARINE LITTER PROJECTS**

Participants gave brief presentations on current research projects including the following:

**JPI Oceans** – Presented by Jesus Gago (IEO, Spain), as John Hanus (JPI Oceans Secretariat) could not be present:

- **BASEMAN** - Defining the BASElines and standards for Microplastics ANALyses in European Waters.
- **WEATHER-MIC** - How microplastic weathering changes its transport, fate and toxicity in the marine environment
- **PLASTOX** - Direct and indirect ecotoxicological impacts of microplastics on marine organisms
- **EPHEMARE** - Ecotoxicological effects of microplastics in marine ecosystems

In October 2017 the JPI projects will be presented during a dedicated conference in Lisbon.

**MEDCIS** (2016-2018) – Presented by François Galgani (Group chair, IFREMER, France). Support Mediterranean Member States towards coherent and Coordinated Implementation of the second phase of the MSFD. Monika Peterlin will be in charge of activities related to microplastics, baselines, targets, thresholds and monitoring.

**INDICIT** (2017-2019) –

Presented by Marco Matiddi (ISPRA, Italy). Implementation of the indicator “Impacts of marine litter on sea turtles and biota” in RSC and MSFD areas. Using sea turtles (*Caretta caretta*) to identify baselines of ingestion and GES. Includes feasibility studies of sea turtle entanglement and fish microplastics ingestions as indicators.

Interreg Med **MEDSEALITTER** (2016-2019) – Presented by Marco Matiddi (ISPRA, Italy). Developing MEDiterranean-SpEcific protocols to protect biodiversity from litter impact at basin and local MPAs scales. Aimed to network, within the Mediterranean basin, representative MPAs and scientific organizations for developing, testing and delivering efficient, easy to apply and cost-effective protocols to monitor and manage litter impact on biodiversity in Mediterranean MPAs. Includes micro and macro litter studies. Monitoring will be done using boats, drones and nets for floating litter.

Thomais Vlachogianni (MIO-ECSDE, Greece) presented updates from 3 projects:

IPA-Adriatic **DeFishGear** (finished). Results for beach litter (including top items), floating litter, seafloor litter and litter in biota, including monitoring protocols were presented. Final outputs are available as a series of reports.

Interreg Med **Act4Litter**. The project aims to facilitate efforts for tackling marine litter in Mediterranean MPAs through the development of effective and targeted measures towards reaching their conservation objectives. A snapshot marine litter assessment is planned to be carried out in Med MPAs.

**SWIM-H2020 SM**. The project includes marine litter activities in Algeria, Egypt and Morocco which focus on assessing marine litter, identifying management measures to tackle the sources, supporting the countries in meeting the goals and objectives of the Regional Plan for Marine Litter Management in the Mediterranean.

**HELCOM SPICE** project – Presented by Marta Ruiz (HELCOM Secretariat). Dedicated to the Implementation and development of key components for the assessment of Status, Pressures and Impacts, and Social and Economic evaluation in the Baltic Sea marine region. It includes Theme 2, developing marine litter indicators towards operationalization and prepare a proposal for the assessment of marine litter in the 2nd holistic assessment, which includes work on baselines for beach litter and litter on the seafloor.

**CLEANATLANTIC** – François Galgani (Group chair, IFREMER, France). The project works to reduce the risks and impacts of marine litter in the Atlantic Area by improving the regional cooperation, reinforcing regions capabilities to prevent, monitoring and removing marine litter, as well as raising awareness to improve marine litter managing systems.

**OceanWise** – Mentioned by Conall O'Connor (DHPCLG, Housing, Government, Ireland). Project developed in the NE Atlantic Ocean (OSPAR' Areas) creating tangible alternative of EPS tool packaging.

**IDEM** – François Galgani (Group chair, IFREMER, France). The objective of the project is to develop a seafloor baseline specific for deep sea descriptors. This includes also work on marine litter.

**BLUE2** - EU integrated policy assessment for the freshwater and marine environment

**LitterDrone** - Presented by Jesus Gago (IEO, Spain). Development and Exploitation of Innovative Tools for Remote Marine Litter Control and Management through UAV's. Planned for beach litter.

**BLASTIC** - Eva Bildberg (Keep Sweden Tidy Foundation, Sweden) presented the projects: BLASTIC (2016-2018) –It aims at reducing plastic waste and, thereby, the inflow of hazardous substances into the Baltic Sea by mapping and monitoring the amounts of litter in the aquatic environment; and

**MARELITT Baltic**– related to the Baltic Marine Litter, contributed to the reduction of marine litter on the shores of the Central Baltic area.

## **MARINE LITTER BASELINES – PROGRESS AND NEXT STEPS**

Following the outcomes of the EU workshop on marine litter baselines (March 2017), Anna Addamo (DG JRC) updated the participants on the process to identify available data in MS and the collection of beach litter data for the baselines scenario testing.

The work on marine litter baselines is a scientific policy support exercise on how to derive baselines for marine litter. Baselines are needed to assess reduction of marine litter. There was concern about the reason and scope of such exercise, JRC explained in detail the purpose of this task, highlighting

the need for comparability of data and assessments of reduction success. This activity is based on experiences in MSs and RSCs. Currently there are different approaches across Europe which would result in non-comparable baselines and thus a different level of protection.

## **ROADMAP**

A summary of outcomes from the EU workshop on marine litter baselines (March 2017, Brussels) was presented. Progress has been made on the preparation of a dedicated collaboration platform (wiki), the compilation of workshop documents online (presentations, scenarios by group, selected scenario and others) and the compilation data availability information (redefinition + template). Next steps in the roadmap include ongoing work on data collection + compilation (Deadline 16.7.2017), overview on statistical tools and methodologies comparison. The need of a precise baseline definition, in order to avoid confusion with other terms (such a thresholds, targets) was emphasized

## **DATA AVAILABILITY**

The information gathered on data availability was reviewed, indicating the updated information from MS since the workshop on baselines took place. MS were encouraged to provide missing information.

The reasoning and the request to provide information on data availability was explained in order to avoid confusion with the collection of data for the scenario testing. The purpose is to know what kind of data is existing, from MSs and RSCs, NGOs and major projects. After explanation, participants did not object to provide such information.

Next steps: Further to the already received data availability information, JRC will continue to receive additional information by missing MS for all marine litter matrices and criteria. Deadline 31.7.2017.

## **SCENARIO + DATA**

Next steps in the baseline process include the Scenario Testing. The following priority scenario was selected after the EU workshop on marine litter baselines:

- ML compartment: beach - macro litter
- Item: all items (individually)
- Spatial Scale: regional, subregional, national
- Temporal scale: 2012-2016

In order to fulfil this task in the period March-December 2017, JRC will collaborate with TG ML and Experts of Statistical Analysis according to the following steps:

- Up to 16th of July 2017: Compilation of data from MS (it may include RSCs and NGOs when necessary)
- End of July: Harmonized database online in WIKI
- End of October: Delivery of Methodology for ML Baseline
- End of December: Delivery of value/s of ML/material/item + Draft of Publication

The methodology for ML Baseline calculation will be discussed on Wiki.

Issues on the data availability for the period 2012-2016 were raised. There may be a delay in the data processing/publishing process. It was agreed to collect available data until end of 2017.

Also, validity/quality of the data would have to be considered, which in principle should have been assessed by MS. EEA data is validated according to EU guidance – TG ML 2013, but a bias to monitoring of dirty/touristic beaches may exist. The fact that EEA data is collected through citizen science (untrained people) and not scientists was discussed. Most MS rely on data from NGOs, but here trained staff is involved. Additionally, variability along the year could result in data discrepancy among periods.

Next steps: Based on the priority scenarios selected datasets, including relevant metadata, will be collected. For beach litter this would be NE Atlantic Ocean (missing MS), Mediterranean MS, Baltic Sea MS, Black Sea MS. EEA, DeFishGear and EMBLAS II data are included in the request. **Deadline 16.7.2017**

In order to further enhance common understanding, JRC will post principle parameters, i.e. a proposals for concepts in baseline setting. **Deadline 16.7.2017**. Discussion with MS will take place on WIKI.

#### **BASELINE SETTING METHODS**

The aim is to provide the most suitable methodology that will allow to derive scientifically-sound and agreed baselines for ML quantities at appropriate scales in the main matrices of litter in the European Seas.

The approach will be based on collaboration, comparability and coherence. Existing approaches will be considered, including OSPAR Litter Analysts, Maes et al. 2017 and others (from and beyond TG ML).

Methodologies from the 4 RSCs may not be comparable, including issues on data aggregation and variability depending on monitoring stations. HELCOM Secretariat expressed their will to share data from a harmonized database, informing that data available are currently grouped in material categories. OSPAR methodology (Litter Analyst) applies statistical analysis on top items because of availability and representativeness of data. These data is limited to a few OSPAR regions only. Suggestion was made to go for a spatial scope at subregional level.

Next steps: RSCs are invited to share their methodology (mathematical approaches and formula) used for calculating baselines and trends. Discussion with RSCs will take place on WIKI.

#### **DATA CONFLUENCE**

In order to proceed with the scenario testing, collected data will be compiled in a standardized database (columns headers, item description, area/unit) at JRC. JRC is aware of the possible hindrances and the potentially involved effort in harmonising data if needed. The way forward will be through feasibility testing. The outcome will also provide valuable information about further harmonisation need at monitoring, data treatment and reporting level.

#### **NEXT STEPS + OUTPUT**

The usefulness of testing scenarios was supported. TG ML can provide messages – on agreements and disagreements – and analysis of consequences of using different approaches. Analysis of testing total amounts vs. selected items can bring information on the influence of the approaches to provide recommendations.

Participants did not raise further problems to send the data (some require a permission):

- OSPAR data is already available (coordinates needed)

- HELCOM Secretariat to share beach litter data grouped by material categories. Raw data are not at the disposal of the Secretariat
- France (provides Mediterranean data)
- Spain (provides Mediterranean data)
- Italy (needs to check within Ministry)
- Slovenia (DeFishGear data 2014 available and to ask permission to Ministry for further data)
- Croatia (DeFishGear data 2014 available)
- Greece (Thomais Vlachogianni to contact possible sources of data)
- Romania (Need to discuss on possible data sources: Research Institutes, NGO MareNostrum)

Ireland mentioned the issue of setting a baseline in relation to earlier already provided measures. This is a matter for future discussion, as already successfully implemented measures might penalize a country against another which has implemented its measures after the baseline date.

Additionally if any other report or information, which has not been regarded so far, is available, TG ML members are invited to share that information.

### **EMODnet Chemistry Module – Marine Litter**

On behalf of EMODnet, Alessandra Giorgetti (OGS, Italy) presented the EMODnet Chemistry module. EMODnet Chemistry collects data in three matrices (water column, biota and sediment) considering eutrophication, ocean acidification, chemical pollution and marine litter. Consortium partners are from 45 institutes across 27 countries. The novelty of marine litter data within EMODnet and needed cooperation with key players (e.g. TG ML, RSCs, projects, etc.) was mentioned.

The present situation for potential data sources was described. Two different approaches to collect data on beach and seafloor litter were described. Deliberations are underway to establish support and arrangements to follow-up. Microlitter is also considered according to EU guidance – TG ML 2013. Since no coordinated efforts are yet in place at regional or European scale, SeaDataNet infrastructure and standards are proposed (e.g. CDIs and ODVs). The proposal has been circulated to TG ML for comments. The JPI Ocean meeting in Lisbon (October 26, 2017) will also discuss about inputs to EMODnet. EMODnet will act as data repository and portal but also its services as tool is to be considered.

It was highlighted that the selection of formats for standardized reporting to EMODNET will be a very basic decision, therefore should be considered with prudence and be well planned. This denotes also to give appropriate time for commenting and not to rush through the process with a potentially sub-optimal result.

Next steps: TG ML to provide comments on EMODnet proposed data template by 1. September 2017

### **DATABASES ON MARINE LITTER + MSFD REPORTING**

François Galgani (Group chair, IFREMER, France) presented information about existing litter databases at different geographical scales: EU Wide, RSCs, subregional and national. Issues on data availability, quality, comparability and selection of parameters for reporting (linked to MSFD) were mentioned.

Databases are still fragmented. MSFD reporting (WG DIKE, TG DATA) needs to be linked to other key role players such as TG ML and EMODnet. Interaction between different data + information

systems/holders is important to focus on data products. TG ML can help as a discussion platform for specific data aspects.

TG ML should possibly express from MS point of view the needs linked to MSFD support/implementation. It may be important to provide (EMODnet/EEA) an infrastructure which can later support additional products.

Next steps: Interaction between TG DATA, EMODNET, EEA in order to derive and inform about the way forward regarding the management of marine litter data.

## **RISK ASSESSMENT**

Stefanie Werner (group co-chair, UBA, Germany) briefed participants on the outcomes of the TG ML Thematic Report: Harm caused by Marine Litter. The report provides an overview on the severity and scales of harmful effects of marine litter, considering what harm to biota is and the different ways litter can harm biota as well as human activities and health.

Risk assessment can help to identify priority actions. In order to consider a risk assessment approach, the probability of effects has to be understood. An approach to risk assessment could consider ranking the expected impacts on biota (e.g. birds, turtles and mammals) of different litter items (e.g. fishing nets, plastic bags, etc.). Approach by Hardesty & Wilcox 2017. Comments raised concern the use of expert judgement for the ranking of expected impacts. Risk assessment will be based on exposure (i.e. litter abundance and potential encounter maps) and effect/impact evidence. There are uncertainties on putting numbers on harm (e.g. ingestion and trophic transfer) when there are no real data nor evidence. As for litter ingestion by fulmars, the evidence of harm might not be clear. There is a need of data to provide evidence based risk assessment including statistics.

The management of harm has to follow a process of identification, analysis and evaluation to support the establishment of appropriate harm mitigation measures. There are different options on the way forward to define a risk assessment approach that need to be discussed: scales (e.g. regional), species level assessment, impact/sub-impact, litter categories or specific items, ecological or target based, and pragmatic (e.g. fulmar EcoQO). It was commented that different types of harm (biota versus socioeconomic) may require very different risk assessment approaches.

It was concluded to collect for now material on the issue within TG ML but not aim for an immediate drafting of a dedicated report.

## **THRESHOLD VALUES**

The revised COM DEC 2017/848/EU commits EU MS to set Marine Litter Thresholds at EU level:

“Member States shall establish threshold values for these levels through cooperation at Union level, taking into account regional or subregional specificities.”

It was discussed how this approach relates to the previous trend based provision. One provided reasoning was that in case of very high litter abundance a reduction based on a percentage target over time might not provide the adequate protection against harm, as even a 30 % reduction might leave too high litter concentrations.

It was acknowledged that the setting of thresholds may be linked to a risk assessment approach, but that such a threshold setting must consider the different types of harm and some of them are not readily accessible to risk assessment procedures. The TG ML sees some urgency in addressing this topic as follow-up to the adoption of the revised ComDec.

Next steps: There is need for a basic brainstorming/discussion within TG ML in order to establish a way forward regarding the setting of threshold values. It was concluded that a dedicated meeting should be planned, preferably still within 2017 (UBA Germany (tbc) might host such a meeting).

## **MSFD D10 IMPLEMENTATION IN POLAND**

Włodzimierz Krzywiński (IMGW, Poland) informed the participants on the current state of implementation of the MSFD D10 in Poland. The Polish Monitoring Programme of the Baltic Sea was proposed in 2014 and started in 2015. The monitoring includes:

- beach litter (10 transects, 4 times per year)
- litter in water column including sea surface (1 cruise per year, 6 stations and 2 transect (travers of two main Polish rivers), 1 m water depth for micro litter (pilot study)
- litter on the sea bottom (BITS, DATRAS)
- microlitter in sediment (every 2 years)
- litter ingested by animals (collection of information on fish)

There are several Polish institutions involved in the preparation of national annual reports. Further, Poland contributed to the drafting of the section on marine litter within the “State of the Baltic Sea” report (HELCOM).

Future plans include the following activities:

- update of the initial assessment of the state of Polish Marine Waters,
- continue monitoring activity in the frame of the Monitoring Programme of the Baltic Sea,
- continue litter monitoring under the revised Monitoring Programme of the Baltic Sea from 2021.

## **INTERNATIONAL COLLABORATION ON MARINE LITTER (G7, G20, UN)**

Amy V. Uhrin (NOAA Marine Debris Program, USA) provided information on the Shoreline Monitoring in the United States. The NOAA Marine Debris Program was founded in 2006 and it is based on 5 pillars: Prevention, Removal, Research, Emergency Response and Regional Coordination. NOAA established a Marine Debris Monitoring and Assessment Program which has evolved into a Citizen Science effort. A protocol for beach litter monitoring is followed which has similarities with protocols used in Europe. The survey design includes assessment of standing stock and accumulation.

The Analysis of NOAA Marine Debris Data Sets (2009-2016) has preliminary shown an increasing density of debris over time. However results are influenced by observers sampling effect and the monitoring site selection (biased toward dirty sites). Methods in place are not comparable (e.g. no correlation among NOAA and CSIRO databases), with differences in detection limits and research efforts.

Regarding policy effectiveness, preliminary results show lower quantities of beverage bottles in beaches with container deposits, but the characteristics of the monitoring sites could have an influence on those results.

To move forward, factors/variables involved in the monitoring should be standardized as much as possible to avoid biases, e.g.: observer effort, search time, area, speed, pattern, # observers; site

selection process (clean, dirty, easy to access); replicability at the scale of inference, group categories based on local issues. The NOAA experience is interesting to TG ML as it highlighted the influence of some observer factors which could be taken into account for further development of protocols.

NOAA provided information about the upcoming 6th International Marine Debris Conference 6IMDC, to be held in March 2018 in San Diego. TG ML chairs have proposed a session dedicated to the technical aspects of Marine Litter monitoring and management in Europe, while DG ENV has proposed a dedicated session on policy aspects.

### **G7 + G20 processes**

Lorenza Babbini (I.S.P.R.A., Italy) provided information on the G7 process, currently chaired by Italy. Ongoing activities include the mapping of processes and initiatives, the identification and filling knowledge gaps, identification of common goals, harmonization of methodologies, involvement of stakeholders and private sector. The importance of working on regional dimension was emphasized.

Francois Galgani (Group chair, IFREMER, France) provided information on the G20 process. Waste water treatment is an important issue. A Global Network of the Committed (GNC) involving RSCs is being set-up. Asia, in particular Indonesia, is a priority region. Stefanie Werner (Germany) added some details on the operational framework. Areas of prior concern are promotion of the socio-economic benefits of preventing marine litter, encouragement of circular economy, support of integrated sustainable waste management, encouragement of resource efficiency and the expansion of awareness raising, education and research. July information update will be communicated.

Within UNEP there are ongoing efforts to provide monitoring harmonisation at global level in support to the implementation of the SDG 14. Within the framework of UNEA the idea of a global plastic convention is being considered. The work done by TG ML is very prominent and is considered worldwide. It was commented that this effort should be recognised and that direct input to the UN activities would be the most appropriate way, besides the featuring of TG ML guidance in upcoming GESAMP work on harmonisation of litter monitoring protocols.

## **MONITORING GUIDANCE REVIEW – DISCUSSION + PLANNING**

Georg Hanke (group co-chair, DG JRC) introduced the topic explaining the context of the Guidance on Monitoring of Marine Litter in the European Seas, published in 2013. The guidance is widely in use and has become a reference document. The session included discussions on the need for review and update of the different sections of the guidance.

### **BEACH LITTER**

The beach litter protocol is in use, major changes should not take place. Checking of minor inconsistencies with OSPAR and MEDPOL protocols should occur and issues settled in a collaborative way. There are issues with the lower size range border, in particular when the numbers of meso-litter are high. Also the inclusion/exclusion of cigarette butts should be checked. For meso-litter a separate sampling strategy might be needed. Subsampling can be an option, having in mind that the methodology has to be replicable and that there is a need to agree on how to select the sampling areas. Germany is working on a pilot monitoring protocol for subsampling.

The interpretation of the master list for the classification of small pieces seems to be problematic. OSPAR is also planning to change their protocol in relation to the list of items (and further, to eliminate the 1000 meters approach).

Other aspects relate to the selection of sampling sites. Characteristics of the beach should be included in the guidance recommendations for selection, taking into account common selection criteria to allow comparison. Also weather conditions should be considered.

The appropriateness of citizen science for monitoring was discussed with indications that with a proper training it is possible to collect quality data.

In conclusion, there should be a minor review of the protocol in close collaboration with all involved stakeholders.

## **FLOATING LITTER**

Additional efforts are needed to provide further guidance for monitoring of floating marine macro litter (FMML). A dedicated workshop was organised by JRC in Barcelona (October, 2016), the workshop report is still under preparation. The outline of the report considers the following topics:

- Data needs/monitoring scope
- FMML properties
- Monitoring approaches
- Monitoring parameters
- Metadata
- Data reporting/format/unit
- Monitoring platforms
- Practical aspects
- Draft Protocol

Additionally, the INTERREG project MedSeaLitter is currently working towards the improving of harmonised monitoring of floating litter, providing potential for close collaboration. The work by DEFISHGEAR should be considered and also experiences on monitoring FMML in the Black Sea (EMBLAS II) and through the RIMMEL project using a tablet computer app. Spain expressed interest to participate in the work.

It was concluded that a revision of the current guidance text is needed and should be done in close collaboration between the different actors.

## **SEAFLOOR LITTER**

There are difficulties/errors with the category list, which had been signalled earlier by UK and France. Difficulties with the use of the list have been found when using trawls data, hindering the identification of common litter items. Identifying priority seafloor litter items is needed to deliver a solid message to policy makers.

There is an issue with the comparability of approaches, e.g. shallow vs. deep seafloor methods. Project AWARE reported on the use of recreational scuba divers for shallow seafloor litter monitoring.

JRC proposes to organise a technical workshop on imaging solutions for seafloor litter monitoring. This was supported and JRC will proceed with exploring feasibility, support, timing and venue.

In conclusion, guidance for seafloor trawling surveys would remain unchanged there appears to be need to provide additional guidance on other methodologies.

#### **MICRO LITTER**

The analysis of micro litter is currently undergoing a period of rapid research output, some of it still controversial. There are multiple methodologies (FT IR, Microscopy of stained samples, RAMAN, mass spectrometry, etc.) for potential use.

. The size distribution of the collected particles should be reported in relation to the different types of nets in use. Method harmonization should be prioritized with regards to the compartment and requirements needed for MSFD reporting, narrowing down possible methods to be used and developing the protocols. Additionally, monitoring should provide evidence of source, and approaches should be developed for this purpose. They may be based on material identification or on pathway tracking.

The preferable monitoring matrix needs further discussion. Monitoring of micro litter has mostly been done on surface water, but the use of sediments has been proposed.

QA/QC procedures are needed. Inter-calibration exercises are the only way to explore the performance of different methodologies, to investigate their relative strengths and to test for data quality, including potential contamination during the sample preparation and analytical process. Such approaches are urgently needed. There are ISO processes for analysis of plastics, but not for monitoring marine litter.

It was concluded that a major re-drafting of the guidance is needed. Contributors and collaboration mechanisms should be explored, in particular with JPI Oceans projects.

#### **INGESTION / ENTANGLEMENT**

INDICIT and MEDSEALITTER projects are working on methodologies for monitoring of entanglement and ingestion. In conclusion there could be a minor revision, in particular based on input from INDICIT and MEDSEALITTER projects.

#### **Updating of monitoring guidance**

As wrap-up of this session, it was concluded that the TG ML guidance on monitoring of marine litter needs to be reviewed, with different effort needed for the various monitoring methodologies.

It was proposed to develop the different protocols (as a step forward from guidance towards protocols) individually and to publish a series of separate reports. This way they could become available as soon as the specific protocols are finalized. Focusing the protocols on the specific purposes will be needed.

It was recognised that this review is a very big task which will require dedicated resources. While input from external partners, e.g. through projects, should be searched, it became evident that additional resources are needed. TG ML should explore how to mobilise and use such resources.

Through the wiki platform dedicated calls for volunteers for leading and collaborating on the guidance update will be made.

Next steps: **volunteers for review lead and work contribution please notify latest by end of August.**

## **CATEGORY MASTERLIST – REVIEW PROCESS**

The MSFD TG ML category Masterlist is cited in the legislative text of the revised ComDec 2017/848/EU. In earlier meetings TG ML delegates from MS and RSCs had expressed their common interest to work towards compatible lists. When discussing monitoring protocols, a few issues regarding item categories have been identified and should be addressed across environmental matrices, including also riverine litter.

Thomais Vlachogianni (MIO-ECSDE, Greece) presented the work that is being done to review the Litter Category Masterlist. The scope is to update, refine and fine-tune the Masterlist, enhancing comparability across all European Regional Seas. The work done so far includes the gathering and comparison of existing lists, collection of inputs on the Masterlist and the drafting of an hierarchical structured Masterlist (excel sheet). The content of the list is being reviewed for corrections, clarifications and further specifications, to allow an easier and more effective use.

The next steps in the review process include:

- Finalizing the excel sheet with all existing up-to-date lists
- Preparing a complete list of proposed litter items that should be deleted, modified or added
- Incorporating all changes into the hierarchical format of the revised draft Masterlist

Different countries and regional seas have different lists. EEA LitterWatch has a list for the different regions. An update on the list is expected within the Barcelona Convention. While regional differences should be accommodated, lists should be upward compatible in order to allow comparison and the use of joint databases.

More collaborative input within TG ML is needed in order to allow the review in the envisaged timeframe. An updated/editable list will be available on WIKI. There is need for a mechanism to introduce new/additional items. OSPAR is invited to provide a draft document on how to make new entries, as it could facilitate the process.

It was discussed that additional item detail can provide valuable information, but can put extra burden on observers and data handlers. The use of electronic documentation and reporting might facilitate detailed item reporting.

**An advance draft of the revised MSFD litter category Masterlist is expected by the end of 2017.**

## **TOP LITTER ITEMS IDENTIFICATION**

Georg Hanke (group co-chair, DG JRC) presented a report on “Marine Litter in Europe - Top Items”. This ad hoc report compiled readily available information about beach litter top items across Europe. There is an urgent need for more complete information as the envisaged Plastics Strategy relies on information about the priority items to be tackled by policy measures.

Meanwhile OSPAR has provided an information update for their area. For the time being the focus on the most abundant items appears the way forward, though an element of consideration of particular risk (as done by OSPAR) could be introduced. It was mentioned that the 30% reduction targets applies on most common items and fishing gear.

There is a need to agree on the methodology to assess top litter items. An option is to follow the OSPAR approach. Initially, the analysis could be applied to beach litter and, if feasible, further tests in different compartments could be done. For integration purposes, proposed by Denmark, a possible approach could be to rank each survey and then rank among surveys. As related to the envisaged Plastics Strategy there is some urgency to this work item.

**The process on the top items list will be launched on WIKI, with a tentative deadline for update until September 2017.**

## **RIVERINE LITTER**

Daniel González (DG JRC) briefed the participants on the content and outcomes from the TG ML Thematic Report: “Riverine Litter Monitoring – Options and Recommendations”. Data and knowledge is scarce, e.g. little is known on the litter dynamics within freshwater basins and inputs to the marine environment. In summary, most methodologies have been adopted from the experience gained in the marine environment.

There are currently no agreed monitoring methodologies available. The technical options for riverine litter monitoring are now being investigated. The report uses available information to provide recommendations for the general approach, monitoring technicalities and research needs.

Some initiatives have been launched to collect data about inputs of floating macro litter to the sea (RIMMEL project) or to study macro litter amounts in river banks (Riverine Input project). Some papers on modelling have been published.

An overview on the progress of RIMMEL was provided, including the development of the JRC Floating Litter App for tablet computers and the data collected through the Riverine Litter Observation Network (RiLON). Output from RIMMEL also provides a list of the most common items of floating macro litter across rivers in EU and non-EU countries. The project also includes the development and deployment of the RiverLitterCam for continuous monitoring of floating macro litter.

Antoine Bruge (Surfrider Foundation Europe, France) gave a short presentation on the outcome from the Riverine Input project. A large number of items were collected monthly from river banks in the catchment of the river Adour (France). Data enabled to classify items by sources and to provide a Top items list. A report is available in French language (the English version will be uploaded in WIKI when available).

The way forward includes future activities within the WFD CIS (ECOSTAT/Chemicals group) and the International River Commissions (e.g. Danube, Rhine, etc.). In Germany, UBA organised in June 2016 the “European Conference on Plastics in Freshwater Environments”. On 27. + 28.6.2017 OSPAR is organising a workshop on Riverine and Marine Litter in Bonn, Germany.

Information exchange between the different actors appears to be a priority, then specific activities including research should be conducted to tackle the quantification and reduction of litter entering the seas through riverine systems.

Next steps: TG ML members to provide approaches and activities on riverine litter via WIKI. MS delegates will check within their countries with WFD colleagues and provide info on approaches.

## **MSFD Programmes of Measures - Status and next steps**

MSFD Article 13 requires MS to establish Programmes of Measures (PoMs). While due in March 2016, not all MS have reported these yet. It appears that the information on the technical detail of the envisaged measures in the reported PoMs is limited.

While EU MS are preparing their national measures, the RSCs OSPAR, HELCOM and Barcelona Convention have established Regional Action Plans, while the Bucharest Convention is currently developing a RAP for the Black Sea.

TG ML is exploring the current development of measure implementation at the different organisational levels in order to identify potential hindrances or need for support for MSFD implementation. It appears that in some regions there are intense activities on interaction e.g. with industry and organisations, and also at national level effective implementation work e.g. through national round tables. MS expressed the need to avoid additional reporting mechanisms.

Next steps: Through a wiki based discussion it is proposed to learn from MS and RSCs about their current state and potential needs regarding the implementation of measures under MSFD and the RAPs. Based on this TG ML should discuss also with relevant COM services and conclude on eventual activities in support to MS.

## **TG MARINE LITTER ORGANISATIONAL ISSUES**

Anna Addamo (DG JRC) provided detailed information on the TG Marine Litter Wiki platform: structure, organization and tools. The TG ML wiki will be further developed. Input and suggestions are welcome.

## **WAY FORWARD AND NEXT STEPS FOR THE IMPLEMENTATION OF THE COM DEC 2017/848/EU**

The wrap-up session with actions and deadlines for TG ML and different actors has been integrated with the different thematic sections of the report.

### **Deadline summary:**

This is a listing of identified deadlines, please refer to full text above for work details.

- Research projects: comments on template format 30.6.2017. Providing additional information also on national projects: Deadline 15.9.2017.
- Baselines data availability: Further to the already received data availability information, JRC will continue to receive additional information by missing MS for all marine litter matrices and criteria. Deadline 31.7.2017.
- Baselines: Based on the priority scenarios selected datasets, including relevant metadata, will be collected. For beach litter this would be NE Atlantic Ocean (missing MS), Mediterranean MS, Baltic Sea MS, Black Sea MS. EEA, DeFishGear and EMBLAS II data are included in the request. Deadline 16.7.2017
- Baseline concepts: JRC will post principle parameters in baseline setting (concepts). Deadline 16.7.2017.
- TG ML to provide comments on EMODnet proposed data template.
- Review of monitoring guidance: volunteers for review lead and work contribution please notify latest by end of August.
- Litter Masterlist revision: An advance draft of the revised MSFD Masterlist is expected by the end of 2017.

- Top Litter Items: The process of the top items list will be launched on WIKI, tentative deadline for update until September 2017.

Best regards

Daniel Gonzalez, Anna Addamo, Georg Hanke, Stefanie Werner, Francois Galgani, Michail Papadoyannakis

14.8.2017

Meeting participants:

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 Schleswig-Holstein Agency for Coastal Protection, Germany  
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