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Agenda item 7(b): Recommendations of the Online Informal Working Groups

Note from the Secretariat

In accordance with the decision taken at the 4th EcAp Coordination Group meeting held in Athens in October 2014, informal online expert groups on Eutrophication (**Eutrophication Working Group**), Contaminants (**Contaminants Working Group**) on and Marine Litter (**Marine Litter Working Group**) were established by the Contracting Parties with the leadership of Greece, Croatia and Spain, and France respectively.

The Informal Online Working Groups, following extensive consultations of nominated experts and under the guidance of the lead countries and the Secretariat, delivered their First Reports as well as a list of recommendations which were submitted as information and working documents to the Integrated Meeting of the Correspondence Groups on Monitoring held in Athens Greece 29 March – April First 2015 (UNEP(DEPI)/MED WG 401/Inf.8; UNEP(DEPI)/MED WG 401/Inf.9 and UNEP(DEPI)/MED WG 401/Inf.10).

Following the deliberations of the Integrated Meeting of the Correspondence Groups on Monitoring, the Informal Online Working groups continued their work and submitted the second drafts (UNEP/DEPI(MED)WG 417/Inf.15 along with a list of updated recommendations for the consideration of the MED POL and REMPEC Focal Points meetings in June 2015.

The updated recommendations reflect as appropriate a number of concerns raised during the Integrated Meeting of the Correspondence Groups on Monitoring as well as comments received after the meeting.

The MED POL and REMPEC focal points are kindly requested to pay particular attention to the specific recommendations and or paragrapghs presented in brackets.

RECOMMENDATIONS OF THE ONLINE INFORMAL WORKING GROUPS

I. INFORMAL ONLINE WORKING GROUP ON EUTROPHICATION

Introduction

In accordance with the decision taken at the last ECAP Coordination Meeting held in Athens in October 2014, an Online Working Group on Eutrophication (**Eutrophication Working Group**) was established by the Contracting Parties led by Greece with support from the Secretariat (MEDPOL Programme).

Following consultations and joint work, the Eutrophication Working Group delivered the report that is presented as information document UNEP(DEPI)/MED WG.417/Inf.15. The report addresses the following issues:

- Propose common definitions on thresholds, baseline, assessment criteria as appropriate;
- Identify and review available existing data, analyze data and their geographical and temporal differences (mean values, basin differences, trends, etc.);
- Prepare concise tables of existing thresholds where identified based on data availability at national and regional levels;
- Review the methods, the criteria and the limit values for assessing eutrophication in Mediterranean and its sub-regions and make relevant proposals.

Proposed thresholds and methodological criteria for eutrophication assessment in Mediterranean.

1. Typology scheme

Typology is very important for further development of classification schemes of a certain area. The recommended water types for applying eutrophication assessment are based on hydrological parameters characterizing a certain area dynamics and circulation. The typological approach is based on the introduction of a static stability parameter (derived from temperature and salinity values in the water column). Such a parameter, on a robust numerical basis, can describe the dynamic behaviour of a coastal system. It is accepted that surface density is adopted as a proxy indicator for static stability as both temperature and salinity are relevant in the dynamic behavior of a coastal marine system. More information on typology criteria and setting is presented in document UNEP(DEPI)/MED WG 417/Inf.15.

In the Mediterranean a considerable number of eutrophication experts have build a typology scheme during the first inter-calibration phase for the EU Water Framework Directive implementation which is still in use and represents a very simple typology approach that can be easily applied Mediterranean wide. In this context three major water types have been defined on the basis of surface density and salinity values as presented in Table 1:

Table 1 Definition of major coastal typees in the Mediterranean that have been intercalibrated (applicable for phytoplankton only) according to EU Comission Decision 2013/480/EU.

	Type I	Type IIA, IIA Adriatic	Type IIIW	Type IIIE	Type Island-W
σ t (density)	<25	25<d<27	>27	>27	All range
salinity	<34.5	34.5<S<37.5	>37.5	>37.5	All range

The different water types, in an ecological perspective, can be described as follows:

- Type I coastal sites highly influenced by freshwater inputs
- Type IIA coastal sites moderately influenced not directly affected by freshwater inputs (continent influence)
- Type IIIW continental coast, coastal sites not influencedaffected by freshwater inputs (Western Basin)
- Type IIIE not influenced by freshwater input (Eastern Basin)
- Type Island: coast (Western Basin)

In addition, the coastal water type III was split in two different sub basins, the Western and the Eastern Mediterranean ones, according to the different trophic conditions and is well documented in literature.

Some examples of Water Types presence finally defined for the European countries, Party to the Barcelona Convention and LBS Protocol are shown in the Table 2.

Table 2 Examples of coastal water types in some Mediterranean countries

New types		**Croatia**	**Cyprus**	**France**	**Greece**	**Italy**	**Slovenia**	**Spain**
	Description							
Type I	Highly influenced by freshwater input			**X**		**X**		
Type II	Moderately influenced by freshwater input	**X**		**X**		**X**	**X**	**X**
Type III WM	Not influenced by freshwater input	**X**		**X**		**X**		**X**
Type III EM	Not influenced by freshwater input		**X**		**X**			

Proposed recommendations

1. Contracting parties are invited to agree on the proposed criteria for typology of waters as presented in Table 1.

2. Contracting parties are invited to apply the above criteria and define their water types with the support from MEDPOL if needed, in the course of 2015.

2. Thresholds and reference conditions for chlorophyll-a in the different water types

Reference and threshold (Good/Moderate status) derived values (G-mean annual values based on long time series (>5 years) of monthly sampling at least) differ from type to type on a sub-regional scale and were build with different strategies. Summaries values are given in Table 3.

Table 3. Reference and threshold values of Chla in Mediterranean coastal water types (according to Commission Decision of 20 September 2013 establishing, pursuant to Directive 2000/60/EC of the European Parliament and of the Council, the values of the Member State monitoring system classifications as a result of the intercalibration exercise and repealing Decision 2008/915/EC).

Coastal waters Typology	Reference conditions of Chla (μg L^{-1})		Boundaries of Chla (μg L^{-1}) for G/M status	
	G_mean	90% percentile	G_mean	90% percentile
Type I	1.4	3.93	6.3	17.7
Type II-FR-SP		1.29		3.58
Type II-A Adriatic	0.33	0.8	1.5	4.0
Type II-B Tyrrhenian	0.32	0.77	1.2	2.9
Type III-W Adriatic			0.64	1.7
Type III-W Tyrrhenian			0.48	1.17
Type III_W FR-SP		0.79		1.80
Type IIIE		0.1		0.4
Type Island-W		0.6		1.2

Note 1: The 90th percentile and the geometrical mean can be derived one from the other according to the following equation:

Chl-a 90th p. = 10^(Log_{10} (G_mean Chl-a) + 1.28 x SD).

Note 2: The MEDGIG exercise phase III is in progress, therefore an update of the above table may occur, which will be considered, accordingly.

Proposed recommendations

1. The Contracting Parties are recommended to rely on the classification scheme on chl-a concentration (μg/l) as a parameter easily applicable by all Mediterranean countries based on the indicative thresholds and reference values presented in Table 3.

2. However, for a complete assessment of eutrophication and GES achievement, GES thresholds and reference conditions (background concentrations) are needed not only for chlorophyll-a, but such values must be set, in the near future, through dedicated workshops and exercises also for nutrients, transparency and oxygen as minimum requirements. Nutrient, transparency and oxygen thresholds and reference values may not be identical for all areas, since is recognized that area-specific environmental conditions must define threshold values. GES could be defined on a sub-regional level, or on a sub-division of the sub-region (such as the Northern Adriatic), due to local specificities in relation to the trophic level and the morphology of the area.

3. Following the evaluation of information provided by a number of countries and other available information, it has to be noted that the Mediterranean countries are using different eutrophication assessment methods such as TRIX, Eutrophication scale, EI, HEAT, etc. These tools are very important to continue to be used at sub-regional or national levels because there is a long term experience within countries which can reveal / be used for assessing eutrophication trends.

4. However, in order to increase coherency and comparability regarding eutrophication assessment methodologies is recommended that further efforts should be made to harmonize existing tools through workshops, dialogue and comparative exercises at regional/subregional/subdivision levels in Mediterranean.

II. INFORMAL ONLINE WORKING GROUP ON CONTAMINANTS

Introduction

Following consultations and joint work, the Contaminants Working Group delivered the report which is presented as information document UNEP(DEPI)/MED WG 417/Inf.15. The report addresses the following issues:

- Review on common definitions on thresholds, baseline and assessment criteria for chemical contaminants and biological effect responses;
- Review the available data uploaded by contracting parties in the MED POL Info-Map platform on contaminants and biological effect responses in the MED in relation with EcAp indicators to perform calculations of BC and BACs for chemical contaminants and biomarkers;
- Identify gaps concerning Mediterranean dataset available to perform calculations of BC and BACs for chemical contaminants and biomarkers;
- Review the methodology and values considered by previous Mediterranean Experts to obtain the preliminary assessment criteria for hazardous substances in the Mediterranean (UNEP/MAP Athens 2011) but also by other expert groups (such as SGIMC-ICES/OSPAR) as well as those adopted by other Regional Conventions (for example OSPAR);
- Agree on what assessment criteria (AC), background assessment criteria (BAC), and environmental assessment criteria (EAC), may be adopted for the Mediterranean Region based as appropriate on the work of other Regional Sea Conventions/regional expert groups;
- Based on the above, create common excel files.

Specific Recommendations of the Contaminant Working Group

1. [Adjust the definition to the Common indicator 12 as "Level of pollution effects of environmental contaminants on biological responses where a cause and effect can be explained"];
2. Indicate sampling methodology to follow and assess biological responses in the Main elements of the Draft Integrated Monitoring and Assessment Programme for Ecological Objectives 5,9 and 10 (UNEP(DEPI)/MED WG 417/6);
3. Amend the UNEP/MAP Technical Report Series No. 120 with particular reference to the sampling period (case of fish) and sampling frequency (case of sediments);
4. Assess and test in the coming years the convenience of normalising contaminant concentrations in samples from certain regions of the Mediterranean Sea when Aluminium and Organic content data from sediments would be available in MED POL database from possibly all Contracting parties);
5. Recommend mussel and fish LMS and AChE activity as mandatory biomarkers;
6. Follow the OSPAR approach of a "traffic light" system for both contaminant concentrations and biological responses, where there are two "thresholds" $_{T0}$ and $_{T1}$ to be defined (OSPAR, 2008; Davies et al., 2012);
7. [Adopt BCs and BACs of contaminants in sediments obtained from the analysis of pre-industrial layers of dated sediment cores established for the Mediterranean region (UNEP(DEPI)/MED WG. 365/Inf.8)];

8. Use for indicative purposes the existing EACs of contaminants in sediments and biota and of biological responses established by ICES/OSPAR until new ecotoxicological information is available including for Mediterranean species; (OSPAR, 2008; Davies et al., 2012);
9. [Request the Contracting Parties and MED POL to further work and develop as appropriate new BCs and BACs of contaminants in sediments obtained by using data from sediments sampled at sites/areas which Mediterranean contracting parties consider being reference stations/areas];
10. Request the Contracting Parties and MED POL to further work and develop new BCs and BACs of contaminants in biota (mussels and fish) obtained by using only data from organisms sampled at sites/areas which Mediterranean contracting parties consider being reference stations/areas;
11. Use the existing BACs and EACs of LMS, SoS, MN frequency and AChE activity biomarkers established (Davies et al., 2012); and further work to develop and discuss new BAC of LMS,SoS,MN frequency and AcHe Activity biomarkers by using data from organisms sampled at sites/areas which the Mediterranean contracting parties consider being reference stations/areas;
12. Extend and amend the existing reporting formats used for contaminants and biological responses in MED POL database to avoid gaps of the information required and to facilitate the proper assessment of environmental criteria;
13. Request the Secretariat (MED POL) to continue supporting Online Contaminants Working Group for long term developments of activities dedicated to chemical pollution, development of assessment.

III. INFORMAL ONLINE WORKING GROUP ON MARINE LITTER

Introduction

Following consultations and joint work, the on line group delivered the first report which was presented as information document UNEP(DEPI)/MED WG 401/Inf.10 and further elaborated in its second version presented to the MED POL Focal Points meeting as information document UNEP(DEPI)MED WG 417Inf.15.

The report addresses the following issues:

- Review the definitions (thresholds, baseline, assessment criteria, GES, etc.),
- Review the available data on marine litter in the MED in relation with ECAP indicators (available data on beaches, at sea, of micro plastics and ingested litter),
- Analyze data with consideration to geographical and temporal differences (mean values, basin differences, trends, etc.), and
- Propose different scenario for thresholds and baseline values, based on various realistic parameters (mean values, minimum values, possible decrease vs time, etc.)

Based on the findings and anlaysis of this report UNEP(DEPI)MED WG 417Inf.15 the following draft recommendations are proposed to the MED POL FP and REMPEC Focal Points as appropriate for their consideration:

1. Proposed baselines values (Rationale for this proposal presented in document UNEP(DEPI)/MED WG 417/Inf.15

Indicator	minimum value	maximum value	mean value	Proposed baseline
16. **Beache**s (items/100 m)	11	3600	920	**450-1400**
17. **Floating litter** (items/km^2)	0	195	3.9	**3-5**
17**. Sea floor** (items/km^2)	0	7700	179	**130-230**
17. **Microplastics** (items/km^2)	0	892000	115000	**80000-130000**
18. **Sea Turtle**s Affected turtles (%) Ingested litter(g)	 14% 0	 92.5% 14	 45.9% 1.37	 **40-60%** **1-3**

2. Categories of marine litter on the beaches

Regarding the categories of marine litter on the beaches, the Marine Litter Working Groupsuggests that the CORMON should agree on a reduced list (desirably close to that in use in the others RSC), which would include the items more frequently found on the Mediterranean beaches, avoiding those that are found rarely. Moreover, the lists of litter categories considered in countries having monitoring programs dedicated to two RSC (e.g. Turkey, France or Spain) would need harmonization. For this,

the MSFD derived MEDPOL list is now compatible with other RSC lists of beach litter categories.

With regards to the MSFD form presented in the Marine litter chapter integrated monitoring programme document UNEP(DEPI)/MED WG 417/6, it is proposed to merge some types of beach litter (e.g. different types of plastic drink bottles or different types of caps/lids and rings, etc.), split glass and ceramic items categories, consider the sanitary and medical wastes as a separate category and not to include several specific items that have not appeared in the running Mediterranean countries monitoring programmes (e.g. Spanish Monitoring Program on beach marine litter, implemented from 2013 in the Mediterranean). In addition, the online group proposes to use for surveys a minimum lower limit of particle size at 0.5 cm (upper size of microlitter); UNEP(DEPI)/MED WG 417/6.

3. Proposed Marine litter environmental targets:

EcAp Indicators	Type of Target	Minimum	Maximum	Recommandation	Remark
Beaches (EI16)	% decrease	significant	30	20% by 2024 or 2030	Not 100% marine pollution
Floatin Litter (EI 17)	% decrease	-	-	Statistically Significant	sources are difficult to control (trans border movements)
Sea Floor Litter (EI 17)	% decrease	stable	10% in 5 years	Statistically Significant	15% in 15 years is possible
Microplastics (EI 17)	% decrease	-	-	Statistically Significant	sources are difficult to control (trans border movements)
Ingested Litter (EI 18)					Movements of litter and Animals to be considered
Number of turtles with ingested litter (%)	% decrease in the rate of affected animals	-	-	Statistically Significant	
Amount of ingested litter	% decrease in quantity of ingested weight(g)	-	-	Statistically Significant	

4. Other recommendations

SCALE	**Common baselines** for the various EI (16, 17, 18) must be considered at the level of the entire basin (Mediterranean) rather than at sub regional level
RESEARCH	Need to **define an adapted protocol for microplastics in sediments**
	Research to **support the development of an indicator dedicated to entanglement**
BASELINES/ TARGETS	**Consider specific baselines and targets** for litter categories that are individually targeted by reduction plans or measures by the Contracting Parties (cigarette butts, plastic bags, cotton buds, etc)
CATEGORIES	**Consider the reduction of the number of categories** in MEDPOL monitoring protocol
	Adapt MEDPOL master list, MSFD derived, to harmonize with other RSC
MONITORING	**Needs for adjustment of the monitoring guidance** (more compatible definitions and wording, list of items/categories)
	Harmonization of the on line group report with the ECAP monitoring guidance for Marine Litter
SUPPORT	
MONITORING	**Consider the relevance of ML for monitoring marine pollution** (lower costs, possible harmonization, easy protocols), especially on beaches, when compared with other approaches (e.g. analysis of contaminants)
	Support evaluation/adjustments of baselines/targets on the basis of the first monitoring results
	Improve knowledge on experimental indicator EI 18, **Support capacity building and monitoring experiment on sea turtles at a pilot scale**
QUALITY ASSURANCE	As the Mediterranean Action Plan on ML is based on measures and monitoring **efforts should be shouldered by quality control/quality assurance** (training, inter-comparisons, use of reference material for microplastics, etc.) to assist survey teams.
DATA MANAGEMENT	**Data base is to be organized** for the collection of data
Secretariat	Continue support for the ML **expert group** for long term developments of activities dedicated to Marine Litter, trends analysis and analysis of data from countries (art 11 of the MLRP)
	Consider **capacity building** in long term, in support of the MLRP (training, inter-calibrations, etc.)