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**Note by the Secretariat**

The current document replaces documents UNEP/MED WG.509/6, UNEP/MED WG.509/7 and UNEP/MED WG.509/8 as reviewed and agreed by the Second Meeting of the Working Groups of Experts on developing the new Regional Plans on Urban Wastewater Treatment and Sewage Sludge Management, and for updating the Regional Plan on Marine Litter in the Mediterranean, 25-26 May 2021

For environmental and economic reasons, this document is printed in a limited number. Delegates are kindly requested to bring their copies to meetings and not to request additional copies.

### **Note by the Secretariat (Regional Plan for Urban Wastewater Treatment)**

The 21<sup>st</sup> Ordinary Meeting of the Contracting Parties (COP-21) to the Barcelona Convention and its Protocols (Naples, Italy, 2-5 December 2019) adopted Decision IG.24/10 which mandated UNEP/MAP (MED POL Programme) to upgrade the Regional Plan on the Reduction of Biochemical Oxygen Demand (BOD5) from Urban Wastewater thereafter titled the “Regional Plan on Urban Wastewater Treatment” (hereafter referred to as the “Regional Plan”).

To this aim, COP21 Decision IG.24/10 requested the establishment of a Working Group of Experts (WG) designated by the Contracting Parties to submit to the MED POL Focal Points Meeting the Regional Plan. The First Meeting of the Working Group was held on 9 and 10 December 2020. The Meeting reviewed and agreed on the draft Regional Plan on Urban Wastewater Treatment and recommended a number of changes.

The Meeting also agreed to allow the members of the WG to provide written inputs on the proposed deadlines for implementation of measures included in square brackets in the Regional Plan; technical details of the subject matter addressed in the Regional Plan including tabulated Emission Limit Values and related technical data and information; as well as scope and outline of contents of technical Appendices which were at the drafting stage.

Inputs and comments were received from five Contracting Parties: Bosnia and Herzegovina, Croatia, France, Italy and Malta. The following summarizes some of the key issues raised by these Countries. Details are provided within the text of the Regional Plan.

- *Bosnia and Herzegovina* noted that provisions in the Regional Plan related to the legally binding emission limit values (ELVs) will entail technical and financial implications which may not be feasible. A number of emission limit values proposed in this Regional Plan are often not in line with national ELVs; being higher, or lower or non-existent. In fact, as the Regional Plan applies to coastal water basins, there will be a need for separate regulations (coastal and internal basins). The date of 2023 for setting legal framework for emission limits is too short as this entails the need to amend nationally-set ELVs. The requirement for tertiary treatment attributed to agglomerations in excess of 15,000 will entail excessive costs to implement and may not be necessary if area is not classified as sensitive area.
- *Croatia* noted that the requirement for tertiary treatment attributed to agglomerations in excess of 15,000 will bring excessive cost to build and maintain such treatment plants adding the need to relate this requirement to sensitivity of the receiving waters with regard to the requested level of treatment. With regard to industrial wastewater, Croatia notes that ELVs should take into account ecological and chemical status of the recipient's waters and not only BAT/BEP.
- *France* welcomed the integration of the reuse of treated wastewater into the regional plan for wastewater treatment, and noted that the regional plan encourages the reuse of wastewater only for two uses: agricultural irrigation and groundwater recharge, while there are other uses that can be also included. France noted the need to coordinate requirements of the Regional Plan with EU regulations while highlighting that certain provisions related to level of wastewater treatment in this Regional Plan are more strict than the EU regulations, which would entail additional cost on the Contracting Parties. A number of modifications and amendments were submitted by France on measures under various Articles. These are reflected in the body of the text of the Regional Plan.
- *Italy*: raised the issue related to the use of the term “quality standard” vis-à-vis “ELVs” noting the need for uniformity of terms across the plan. Italy also noted that adopting standards is in 2023 while meeting these standards is set for 2035 adding that over such a long period of time,

many technological advances would have occurred which would necessitate review of these deadlines. Finally, Italy noted that ELVs for substances and parameter should be selected and regulated following a risk-based approach which takes into account regional and local conditions, indicating that the prescriptive approach for setting ELVs should be reconsidered.

- *Malta* indicated that the Regional Plan is setting much stricter monitoring and compliance requirements in relation to a wide range of parameters and extends these restrictions to include water re-use and discharge into sewers. Malta suggested that a flexible risk-based approach should be considered instead, which would ensure applicability of the plan across the region, noting that this approach is also currently under discussion as part of the revision processes of relevant policies at EU level.

The Second Meeting of the Working Group reviewed the revised Regional Plan and recommended its submission to the MED POL Focal Points Meeting to be held back-to-back with this meeting (i.e. 27-28 May 2021). The document is presented with paragraphs and or sections not yet agreed in square brackets highlighted in blue type set. It also includes footnotes with some explanations as well statements by a number of Contracting Parties.

**Note by the Secretariat (Regional Plan for Sewage Sludge Management)**

The 21<sup>st</sup> Ordinary Meeting of the Contracting Parties (COP-21) to the Barcelona Convention and its Protocols (Naples, Italy, 2-5 December 2019) adopted Decision IG.24/10 which mandated UNEP/MAP (MED POL Programme) to develop the Regional Plan on Sewage Sludge Management (hereafter referred to as the “Regional Plan”).

To this aim, COP21 Decision IG.24/10 requested the establishment of a Working Group of Experts (WG) designated by the Contracting Parties to submit to the MED POL Focal Points Meeting the new Regional Plan. The First Meeting of the Working Group was held on 9 and 10 December 2020. The Meeting reviewed and agreed on the draft Regional Plan on Sewage Sludge Management and recommended a number of changes.

The Meeting also agreed to allow the members of the WG to provide written inputs on the definition of terms; proposed deadlines for implementation of measures included in square brackets in the Regional Plan; technical details of the subject matter addressed in the Regional Plan including tabulated Emission Limit Values and related technical data and information; and scope and outline of contents of the Appendices which were at the drafting stage.

Inputs and comments were received from four Contracting Parties: Bosnia and Herzegovina, Croatia, France and Italy. The following summarizes some of the key issues raised by these Countries. Details are provided within the text of the Regional Plan.

- *Bosnia and Herzegovina* noted under Article 1 the importance of unifying similar definitions between this Regional Plan and the Regional Plan for Urban Wastewater Treatment. Under Article 5 related to the “Measures”, it was indicated that compliance with emission limit values is rather difficult. Accordingly, set deadlines are difficult to comply with and are rather short. Clarifications were also sought on “appropriate treatment steps to limit pathogen contents in biosolids and concentrations of heavy metals” indicating need to address this issue further in the technical annex.
- *Croatia* provided a number of comments under Article 1, noting the need for unified definitions with the Regional Plan for Urban Wastewater Treatment regarding domestic wastewater, industrial wastewater, secondary treatment, tertiary treatment and wastewater treatment plants. Under Article 5 (Measures), Croatia requested clarifications under paragraphs 7 and 8 which stipulate that the Contracting Parties shall meet limit values for pathogen content and for heavy metals in biosolids by 2023. The issue is related to the question of whether these dates are set for adopting the required regulations or for implementing measures to meet these ELVs. Croatia also requested an additional clarification on the “required infrastructure” for use of treated sludge for agricultural land application and/or for energy/nutrient recovery under Article 5.
- *France* questions the reason why the scope of the regional plan covers only sewage sludge from municipal treatment plants, while excluding from the scope sewage sludge from industrial treatment plants, which can also be the subject of agricultural recovery or use in energy recovery. Under Article (4), it was noted that some guiding principles are more restrictive than the provisions of the European directive relating to the use of sludge on agricultural soils (Directive n° 86/278) or contrary to France's strategy to limit the pollution of sludge by micropollutants. Under Article 5 related to treatment of sewage sludge (paragraph 6), France proposed that there is no need for treatment prior to use of sludge in incineration. Therefore, “biosolids” should be replaced by “sludge”. This also applies in paragraph (7) on pathogen contents of sludge whereby it is stated that there is no obligation to treat sludge before spreading according to the EU Directive, which is contrary to the requirement of the Regional Plan. France notes that sludge treatment is required only for specific conditions of

use and provides for that purpose a table for the conditions under which sludge can be used. Under paragraph (13) related to sewage sludge use and energy/nutrient recovery, France notes that sewage sludge can be used in other applications and that the Regional Plan should take into consideration usage further to available local opportunities.

- *Italy* proposed modifications to a number of definitions under Article (1) some of which to align with those in the Regional Plan for Urban Wastewater Treatment. This includes domestic wastewater, industrial wastewater, primary treatment, secondary treatment, tertiary treatment and urban wastewater. Under Article 5, and specifically in relation to the ELVs listed in Table 1 (pathogen contents); Table 2 (heavy metals in biosolids); Table 3 (heavy metals in soils), Italy presented alternative tables with ELVs as per European regulations or national legislation for further consideration. These are included in the text of the Regional Plan. Regarding Table 4 which provides limit values for amounts of heavy metals which may be added to agricultural land, Italy proposed to delete this table as limit values should be left to national provision for soil protection (or to be considered as indicative values).

The Second Meeting of the Working Group reviewed the the revised Regional Plan and recommended its submission to the MED POL Focal Points Meeting to be held back-to-back with this meeting (i.e. 27-28 May 2021). The document is presented with paragraphs and or sections not yet agreed in square brackets highlighted in blue type set. It also includes footnotes with some explanations as well statements by a number of Contracting Parties.

**Note by the Secretariat (Updated Regional Plan on Marine Litter Management in the Mediterranean)**

The 21<sup>st</sup> Ordinary Meeting of the Contracting Parties (COP-21) to the Convention for the Protection of the Marine Environment and the Coastal Region of the Mediterranean and its Protocols (Naples, Italy, 2-5 December 2019) adopted Decision IG.24/10 which mandated UNEP/MAP (MED POL Programme) to upgrade the Regional Plan on the Marine Litter Management in the Mediterranean (hereafter referred to as the “Regional Plan”).

To this aim, COP21 Decision IG.24/10 requested the establishment of a Working Group of Experts designated by the Contracting Parties to submit to the MED POL Focal Points Meeting the updated Regional Plan. The First Meeting of the Working Group was held on 31 March and 1 April 2021. The Meeting reviewed the proposed articles and related measures of the Regional Plan and incorporated several technical modifications and amendments.

At the conclusion of the Meeting, it was agreed that the Members of the Working Group would continue on-line consultations after the meeting regarding amendments entailing deadlines and/or specific commitments under Articles 9 and 10 of the Regional Plan. It was further agreed that the Secretariat would update Articles 16 and 17 of the Regional Plan in line with comments received by the participants during the Meeting. With regards to the annexes, the Meeting agreed to update the first and second annexes (workplan and research topics). The Meeting agreed to delete the third annex related to the elements for national biennial reports.

Inputs and comments were received from four Contracting Parties: Malta, Spain, Tunisia and Morocco. Two MAP Partners: WWF-Mediterranean and PlasticEurope also submitted written comments. The following summarizes some of the key issues raised by these Countries. Details are provided within the text of the amended Regional Plan:

- *Malta*: Further to new measures proposed, a number of new definitions under Article 3 were provided including plastic, single-use plastic products, lightweight plastic carrier bags and waste. Amendments to existing definitions were also presented such as fishing gear, and EPR. In Article 8, Malta requested a number of clarifications on the nature of informal sector for recycling of waste and compostable plastics. With regard to Articles 9 and 10, Malta provided amendments to economic incentives, and proposed to extend the deadline for institutionalizing preventive measures to achieve circular economy for plastics. In this regard, it requested clarifications to the nature of marine plastic and the activities for which target setting for establishing national baseline of marine plastics should apply. Malta also recommended to identify sources of plastic litter and of primary and secondary microplastics where feasible. Few points of clarifications were also raised regarding nature of plastic bags, problematic and unnecessary plastics products, plastics of concern, types of products for which EPR applies, etc. Regarding monitoring programme under Article 12, it suggested that the Regional Plan clearly specifies that certain measures that are not applicable to certain Contracting Parties are not obligatory. Finally, under Article 16, Malta requested that an awareness strategy is implemented across different marine users and the general public as well as inclusion of non-governmental organizations as part of stakeholder participation in Article 17.
- *Morocco*: Under Article 8, Morocco opts for a later date (2028) for the Contracting Parties to take adequate regulatory measures to integrate the informal sector into regulated waste collection and recycling schemes. Morocco also supports a later date of 2030 under Article 9 for adopting marine litter prevention measures aiming to achieve a circular economy for plastics. Regarding land-based and sea-based sources under Article 9, Morocco indicates that the Contracting Parties shall apply the prescribed measures, however “to the extent possible.” This was also reiterated for the measures which the Contracting Parties shall take under Article 16 for public awareness and education.

- *Spain*: Under Article 3, comments and amendments are proposed to some definitions such as microplastics, ALDFG, EPR, garbage, BAT and BEP, and circular economy. Under Article 8, clarification is sought on the informal sector for recycling and in relation to compostable plastics and intention of noting in the Regional Plan. Under Article 9, amendment to EPR. Regarding the monitoring programme (Article 12), Spain notes that a COP decision has agreed to include litter monitoring in SPAMIs, not in all MPA. Therefore, MPAs should be deleted. Finally, with regard to Article 17 on major groups and stakeholder participation, Spain provides inputs with regard to voluntary agreements with the manufacturing and retail industry (included in this document under Article 9).
- *Tunisia*: Under Article 8, Tunisia proposes that Countries are provided with alternatives to develop or adopt required legislation as appropriate. Under Article 10, the groups to develop partnerships with are provided in additional details (fishermen, associations, fishing groups).
- *WWF-Mediterranean*: Proposals are provided for including SMART targets for plastic waste collection and recycling under Article 7. Under Article 9, comments are provide on economic instruments. Under Article 9, phasing out is singled out as the only option deleting possible reduction for single use plastic items. And contrary to Countries' proposals for extending date of 2025 to 2028 to take adequate regulatory measures to integrate the informal sector into regulated waste collection and recycling schemes, WWF recommends keeping the original date in line with the Naples Declaration and commitments of SDG 14.1. Also, under Article 9, WWF indicates that targets setting for establishing national baseline of marine plastics should be for waste collection and recycling as well as for consumption and production of SUPB.
- *PlasticEurope*: the main comment is related to Article 9 regarding fiscal and economic incentives. It proposes that reduction and phasing out of plastic bags and other single-use plastic items of concern should take place *when environmentally sound alternatives exist and based on life cycle assessment (LCA).*"

The Second Meeting of the Working Group reviewed the the revised Regional Plan and recommended its submission to the MED POL Focal Points Meeting to be held back-to-back with this meeting (i.e. 27-28 May 2021). The document is presented with paragraphs and or sections not yet agreed in square brackets highlighted in blue type set. It also includes footnotes with some explanations as well statements by a number of Contracting Parties.

**Conclusions and Recommendations of the Second Meeting of the Working Groups of Experts on developing the Regional Plans on Urban Wastewater Treatment and Sewage Sludge Management, and on updating the Regional Plan on Marine Litter in the Mediterranean**

On 25 and 26 May 2021, the Second Meeting of the Working Groups of Experts on developing the Regional Plans on Urban Wastewater Treatment and Sewage Sludge Management, and on updating the Regional Plan on Marine Litter in the Mediterranean was held by videoconference. The meeting was organized by UNEP/MAP Secretariat (MED POL Programme).

Further to its deliberations, the Meeting reached the following conclusions:

1. The Meeting reviewed the Draft Regional Plan on Urban Wastewater Treatment in the Framework of Article 15 of the LBS Protocol. The Meeting recommended submission of the revised version, as contained in Appendix I, to the Meeting of the MED POL Focal Points (27-28 May 2021) including a number of paragraphs and timelines for implementation of measures not yet agreed (in square brackets).
2. The Meeting reviewed the Draft Regional Plan on Sewage Sludge Management in the Framework of Article 15 of the LBS Protocol. The Meeting recommended submission of the revised version, as contained in Appendix II, to the Meeting of the MED POL Focal Points (27-28 May 2021) including a number of paragraphs and timelines for implementation of measures not yet agreed (in square brackets).
3. The Meeting reviewed the Draft Updated Regional Plan on Marine Litter Management in the Mediterranean in the Framework of Article 15 of the LBS Protocol. The Meeting recommended submission of the revised version, as contained in Appendix III, to the Meeting of the MED POL Focal Points (27-28 May 2021) including a number of paragraphs and timelines for implementation of measures not yet agreed (in square brackets).



## **Regional Plan on Urban Wastewater Treatment**

## Regional Plan for Urban Wastewater Treatment

### ARTICLE I Definition of Terms

For the purpose of this Regional Plan for Urban Wastewater Treatment; hereinafter referred to as the "Regional Plan":

- a) "Agglomeration" means an area where the population and/or economic activities are sufficiently concentrated for urban wastewater to be collected and conducted to an urban wastewater treatment plant or to a final discharge point;
- b) "Appropriate treatment" means treatment of urban wastewater by any process and/or disposal system which after discharge allows the receiving waters to meet the relevant quality objectives;
- c) "Aquifer" is an underground rock formation or sedimentary deposit porous enough to hold water that can be used to supply wells;
- d) "Aquifer recharge" is the process of water infiltration by rainfall or other surface water into the ground. Groundwater recharge or deep percolation is a hydrologic process, whereby water moves downward from surface water to groundwater;
- e) "Best Available Techniques (BAT)" as defined in Annex IV for the Land-Based Source and Activities (LBS) Protocol;
- f) "Best Environmental Practice (BEP)" as defined in Annex IV for the Land-Based Source and Activities (LBS) Protocol;
- g) "Biochemical Oxygen Demand (BOD5)" Amount of oxygen needed for the biochemical oxidation of the organic matter to carbon dioxide in 5 days;
- h) "Collecting system" means a system of conduits which collects and conducts urban wastewater;
- i) "Contaminants of Emerging Concern (CEC)" include several types of chemicals: persistent organic pollutants (POPs), pharmaceuticals and personal care products (PPCPs), including a wide suite of human prescribed drugs, veterinary medicines such as antimicrobials, antibiotics, anti-fungal, growth promoters and hormones; endocrine-disrupting chemicals (EDCs), including synthetic estrogens and androgens, nanomaterials such as carbon nanotubes or nano-scale particulate titanium dioxide, of which little is known about either their environmental fate or effects;
- j) "Domestic wastewater" means wastewater from residential settlements and services which originates predominantly from the human metabolism and from household activities;
- k) "Emission Limit Value (ELV)" means the maximum allowable concentration measured as a "composite" sample, of a pollutant in an effluent discharged to the environment;
- l) "Good Environmental Status": Concentrations of nutrients in the euphotic layer are in line with prevailing physiographic, geographic and climate conditions;
- m) "Industrial wastewater" means any wastewater which is discharged from premises used for carrying on any trade or industry, other than domestic wastewater and run-off rainwater;
- n) "Managed aquifer recharge (MAR)" is defined as the intentional recharge of water to aquifers for subsequent recovery or environmental benefit;
- o) "One (1) population equivalent (p.e.)" means the organic biodegradable load having a five-day biochemical oxygen demand (BOD5) of 60 grams of oxygen per day. For the purpose of this regional plan, the load expressed in p.e. shall be calculated on the basis of the maximum

average weekly load entering the treatment plant during the year, excluding unusual situations such as those due to heavy rain;

- p) "Primary treatment" means treatment of urban wastewater by a physical and/or chemical process involving settlement of suspended solids, or other processes in which the BOD5 of the incoming wastewater is reduced by at least 20 percent before discharge and the total suspended solids of the incoming wastewater are reduced by at least 50 percent;
- q) "Reclaimed water" urban wastewater that has been treated to meet specific water quality criteria with the intent of being used for a range of beneficial purposes;
- r) "Secondary treatment" means treatment of urban wastewater by a process generally involving biological treatment with a secondary settlement or other process so that the treatment results in a minimum reduction of the initial load of 70 to 90 percent of BOD5;
- s) "Tertiary treatment" means treatment of urban wastewater by processes generally involving physical, chemical, biological and other procedures so that the treatment results in reduction of phosphorus and nitrogen, as well as disinfection;
- t) "Urban wastewater" means the domestic wastewater or the mixture of domestic wastewater with industrial wastewater and/or run-off rainwater;
- u) "WEFE" means Water – Energy – Food – Ecosystem Nexus;
- v) "Wastewater Treatment Plant (WWTP)" means systems used to treat urban wastewater using physical, chemical and/or biological techniques.

## **ARTICLE II**

### **Scope and Objective**

1. The area to which the Regional Plan applies is the area defined in accordance with Article 3 of the LBS Protocol, consisting of the Mediterranean Sea Area as defined in Article 1 of the Convention; the hydrologic basin of the Mediterranean Sea Area; waters on the landward side of the baselines from which the breadth of the territorial sea is measured and extending, in the case of watercourses, up to the freshwater limit; brackish waters, coastal salt waters including marshes and coastal lagoons; and ground waters communicating with the Mediterranean Sea.
2. The Regional Plan shall apply to the collection, treatment, reuse and discharge of urban wastewaters and the pre-treatment and discharge of industrial wastewater from certain industrial sectors.
3. The objective of the Regional Plan on Urban Wastewater Treatment is to protect the coastal and marine environment and human health from the adverse effects of the above mentioned wastewater direct and or indirect discharges, in particular regarding adverse effects on the oxygen content of the coastal and marine environment and eutrophication phenomena as well as promote resource water and energy efficiency.

## **ARTICLE III**

### **Preservation of Rights**

4. The provisions of this Regional Plan shall be without prejudice to stricter provisions respecting the management of urban wastewater treatment plants contained in other existing or future national, regional or international instruments or programs.

## **ARTICLE IV**

### **Guiding Principles**

5. The Regional Plan measures are formulated to ensure the application of the following principles:
  - i. Effective reclamation and reuse of treated wastewater is promoted as a means for water resource conservation and efficiency to effectively address regional water scarcity;
  - ii. Wastewater collection and treatment systems incorporate aspects related to climate change impacts in the design and operation phases, including extreme hydrological patterns and their impact on influent wastewater;
  - iii. Wastewater treatment processes promote energy efficiency and water savings, and integrate renewable energy alternatives to the extent possible in accordance with BAT and BEP;
  - iv. Industrial wastewater is treated to the extent possible on site. Industrial wastewater entering collecting systems and WWTPs are subject to pre-treatment, if necessary, in order to (a) protect the collecting systems and the treatment plant; (b) ensure that the operation of the WWTP and the treatment of the sludge are not impeded; and (c) ensure that discharge effluents do not adversely affect the Mediterranean marine environment, particularly for priority substances, contaminants of emerging concern which are harmful to the receiving waters and cannot be treated in urban WWTPs;
  - v. For the purpose of this Regional Plan, WEFE nexus is incorporated into the design phase of WWTPs with the aim to promote energy efficiency and reuse of reclaimed wastewater;
  - vi. Selection of treatment technologies takes into consideration investment and operational costs of the treatment technology and the ability to pay by beneficiaries in order to ensure sustainable and reliable quality-treated wastewater.

## **ARTICLE V**

### **Measures <sup>1</sup>**

#### **I. Collection and treatment of urban wastewater**

6. The Contracting Parties shall ensure that all agglomerations are provided with collecting systems for urban wastewater as follows:
  - i. [At the latest by 2025] for those with a population equivalent (p.e.) of more than 15,000;
  - ii. [At the latest by 2035] for those with a population equivalent (p.e.) between 2000 and 15,000.
7. The Contracting Parties shall set emission limit values for discharge of treated effluents from WWTPs upon implementation of necessary measures. To this aim, the Contracting Parties shall [set] [adopt] at the latest by [2023] the emission limit values as provided for in Appendix I for the following categories:
  - i. Discharge of effluents from urban wastewater treatment plants to the environment (Appendix I.A).
  - ii. Reuse of reclaimed wastewater for agriculture irrigation Appendix I.B).

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<sup>1</sup> Statement by Malta supported by France and Italy to be put in the text of the regional plan: [*The adoption, by 2025, of ELVs for (i) treated wastewater from urban WWTPs, (ii) reuse of waste water and (iii) industrial waste water discharges to collecting systems by the Contracting Parties shall be subject to a risk-assessment in relation to the environmental sensitivity of the receiving waters and the relevant sources of contaminants in the country. The Contracting Parties shall adapt the monitoring processes voluntarily as outlined in Appendices I to III, including the parameters to be monitored, to the main risks as identified through the risk-assessment.*]

- iii. Discharge of industrial wastewater into collecting systems and urban wastewater treatment plants (Appendix I.C).
8. The Contracting Parties may approve stricter emission limit values than those provided in Appendix I considering the characteristics of receiving/recipient environment.
9. The Contracting Parties shall ensure that prior to discharge, treated wastewater from urban WWTPs meets the following requirements [by [2030] 2035 at the latest]:
  - i. All discharges from agglomerations attributed to a population size of more than 15,000 p.e. are subject to the extent possible to tertiary treatment provided that the Good Environmental Status (GES) of the recipient environment is maintained.
  - ii. [All discharges from agglomerations attributed to a population size of between 2000 and 15,000 p.e. are subject to the extent possible to secondary treatment provided that the Good Environmental Status (GES) of the recipient environment is maintained].<sup>2</sup>
10. The Contracting Parties shall promote to the extent possible nature-based solutions for small agglomerations of less than 2000 p.e. with a focus on constructed wetlands where applicable.
11. The Contracting Parties shall ensure that urban wastewater treatment plants, built to comply with the requirements of Articles 7 and 8, are designed, constructed, operated and maintained to ensure sufficient performance under normal local climatic conditions.
12. The Contracting Parties shall ensure that WWTPs are designed to account for:
  - i. Seasonal variations of loads including from touristic activities;
  - ii. Volume and characteristics of the local municipal wastewater; and
  - iii. Limitation of pollution of receiving water (taking into consideration, inter alia, Contaminants of Emerging Concern).
13. The Contracting Parties shall implement measures for:
  - i. Segregating collecting systems for storm water and municipal wastewater, if technically and economically feasible;
  - ii. Preventing or if not possible minimizing sewage and wastewater treatment plants' overflow due to rainwater penetration and flooding;
  - iii. Addressing impacts of points of discharge of treated wastewater so as to minimize effects on receiving waters;
  - iv. Adopting tools for conservation of surface water runoff in built environment; and
  - v. Reducing pollutant loads and litter in storm water runoff from municipal and industrial sources.

## II. Reclamation and reuse of wastewater

14. The Contracting Parties shall promote the reuse of reclaimed wastewater. To this aim, the Contracting Parties shall:
  - i. Ensure that treatment technologies and additional treatments for reclaimed wastewater meet the emission limit values for reuse of reclaimed wastewater as provided for in Appendix I.B.
  - ii. Implement wastewater reuse systems that include, inter alia:

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<sup>2</sup> Statement by Italy to be put in the text of the Regional Plan: *[The Contracting Parties shall ensure that urban waste water entering collecting systems shall before discharge be subject to secondary treatment for all discharges from agglomerations of more than 2000 p.e., except for discharges from agglomerations less than 10000 p.e. discharging to coastal waters, which shall be subject to appropriate treatment].*

- a) Storage and distribution systems for reuse of reclaimed wastewater effluents in agriculture;
- b) Recharge methods in case of managed aquifer recharge strictly complying with Appendix II Guiding Principles.

### III. Industrial wastewater discharge

15. [By 2023 [2025] at the latest,] the Contracting Parties shall ensure that the competent authority or appropriate body sets emission limit values appropriate to the nature of industry discharging industrial effluents to collecting systems connected to urban WWTPs.
16. [By 2025 [2035] at the latest,] the Contracting Parties shall ensure that industrial wastewater discharged into collecting systems and urban WWTPs shall meet, as a minimum, the emission limit values set in Appendix I.C.

### IV. Monitoring

17. The Contracting Parties shall take measures to ensure regular monitoring in accordance with general elements and monitoring frequencies requirements as provided in Appendix III of the Regional Plan:
  - i. Discharges from urban wastewater treatment plants to verify compliance with the requirements.
  - ii. Receiving waters subject to discharges from urban wastewater treatment plants.
  - iii. Quality of reclaimed wastewater discharged from treatment plants for beneficial use.
  - iv. Discharged industrial effluents to collecting systems including substances harmful to receiving waters, sewerage networks and urban wastewater treatment plants.

## ARTICLE VI

### **Technical Assistance, Transfer of Technology and Capacity Building**

18. For the purpose of facilitating the effective implementation of Article V of this Regional Plan, the Contracting Parties collaborate to implement, exchange and share best practices directly or with the support of the Secretariat including BAT, BEP, sustainable consumption and production, circular economy, resource efficiency, WEFEX Nexus in the design, construction, operation and maintenance of the urban wastewater treatment plants in the context of Integrated Water Resources Management. To this aim, the Contracting Parties also collaborate in preparing and implementing common technical guidelines.

## ARTICLE VII

### **Timetable for Implementation**

19. The Contracting Parties shall implement the measures included in this Regional Plan as per the timelines associated with these measures.

**ARTICLE VIII**  
**Reporting**

20. The Contracting Parties shall report on implementation of measures stipulated in this Regional Plan in line with the reporting requirement and timelines provided in Article 26 of the Convention and Article 13, paragraph 2(d) of the LBS Protocol.

**ARTICLE IX**  
**Entry into Force**

21. The present Regional Plan shall enter into force and become binding on the 180<sup>th</sup> day following the day of notification by the Secretariat in accordance with Article 15, paragraphs 3 and 4, of the LBS Protocol.

**ANNEX I.A**  
**Emission Limit Values for discharge of effluents from urban wastewater treatment plants to the environment**

*Table 1: Emission limit values for discharge of effluent to the environment \**

Parameter	Unit	Emission limit values
<b>BOD<sub>5</sub></b>	mg/L	[25]
<b>Total phosphorous</b>	mg/L	2
<b>Total Nitrogen</b>	mg/L	[40]
<b>Arsenic (As)</b>	mg/L	[0.5]
<b>Cadmium (Cd)</b>	mg/L	0.025
<b>Chlorine residual</b>	mg/L	[0.3]
<b>Chromium (Cr)</b>	mg/L	0.25
<b>COD</b>	mg/L	[125]
<b>Copper (Cu)</b>	mg/L	0.1
<b>Cyanide</b>	mg/L	0.01
<b>Lead (Pb)</b>	mg/L	0.04
<b>Mercury (Hg)</b>	mg/L	0.0025
<b>Mineral Oil</b>	mg/L	1.5
<b>Nickel</b>	mg/L	0.25
<b>pH</b>	pH unit	[6 to 9]
<b>Phenol</b>	mg/L	[0.15]
<b>Total Suspended Solids (TSS)</b>	mg/L	30
<b>Zinc</b>	mg/L	1
<b>Total Hydrocarbons</b>	mg/L	[10]

*\* Different emission limit values, including for other parameters, may be adopted further to a risk-based assessment provided that there is no negative impact on the recipient environment*

Emission limit values (ELVs) for other emerging pollutants may be set considering the following factors:

- Setting thresholds for toxicity of effluent streams discharged to the environment to prevent toxicity to aquatic organisms;
- Determination of the minimum percentage of biodegradability of the effluent streams (at least 80%) to achieve minimum accumulation in the ecosystem and losses of habitats and biodiversity; and
- Identification of potential microplastic sources and adoption of related policy and methodology further to state of the art on related research on this topic.

**ANNEX I.B**  
**Emission limit values for reuse of reclaimed wastewater for agriculture irrigation**

Classes definitions for reclaimed wastewater for reuse in agriculture irrigation:

**Class A – All food crops**, including crops eaten raw when reclaimed wastewater comes into direct contact with edible parts of the crop, and irrigation of root crops.

**Class B - Processed food crops**: crops which are intended for human consumption not to be eaten raw but after a treatment process and **Non-food crops**: crops which are not intended for human consumption.



Table 2: Emission limit values for reclaimed wastewater use in agricultural irrigation according to Class definition

Parameter	Limit values for reclaimed water quality class for effluent reuse in agricultural irrigation *	
	Class A	Class B
<b>BOD5</b>	≤10 mg/L	25 mg/L or reduction of the influent load of 70% to 90%.
<b>COD**</b>	100 mg/L	125 mg/L
<b>Escherichia coli</b>	≤10 cfu/100 ml	≤100 cfu/100 ml
<b>Fecal Coli</b>	≤10 cfu/100ml or below detection limit	≤100 cfu/100ml
<b>Intestinal nematodes (helminth eggs)</b>	≤1 egg/l	≤1 egg/l
<b>Legionella spp</b>	≤1,000 cfu/l	≤1,000 cfu/l
<b>Total Suspended Solids (TSS)</b>	≤10 mg/L	35 mg/L or reduction of influent load of 90%.
<b>Turbidity</b>	≤5 NTU	None
<b>Parameters applicable to both Classes (A and B)</b>		
<b>Total Nitrogen</b>	25	
<b>Total phosphorous</b>	5	
<b>Sodium - Na</b>	150	
<b>Chlorides - Cl</b>	250	
<b>Boron - B</b>	0.5	
<b>Heavy metals</b>		
<b>Cadmium - Cd</b>	0.01	
<b>Chromium - Cr</b>	0.1	
<b>Copper - Cu</b>	0.2	
<b>Mercury - Hg</b>	0.002	
<b>Nickel - Ni</b>	0.2	
<b>Lead - Pb</b>	0.1	
<b>Zinc - Zn</b>	0.5	
<b>pH</b>	6.5-8.5	
<b>Additional heavy metals</b>		
<b>Aluminium - Al</b>	1 to 5	
<b>Arsenic - As</b>	0.1	
<b>Beryllium - Be</b>	0.1	
<b>Cobalt - Co</b>	0.05	
<b>Iron - Fe</b>	2	
<b>Lithium - Li</b>	2.5	
<b>Manganese - Mn</b>	0.2	

Parameter	Limit values for reclaimed water quality class for effluent reuse in agricultural irrigation *	
	Class A	Class B
<b>Molibdenum - Mo</b>	0.01	
<b>Selenium - Se</b>	0.02	
<b>Vanadium - V</b>	0.1	

\* Different emission limit values, including for different parameters, may be adopted further to a risk-based assessment provided that the total loads do not affect the recipient environment and human health

## ANNEX I.C

### Emission limit values for discharge of industrial wastewater into collecting systems and urban wastewater treatment plants

Industrial wastewater entering collecting systems and urban wastewater treatment plants shall be subject to pre-treatment as required in order to:

- Protect the health of staff working in collecting systems and treatment plants.
- Ensure that collecting systems, WWTP and associated equipment are not damaged.
- Ensure that the operation of the WWTP and the treatment of sludge are not impeded.
- Ensure that discharges from the treatment plants do not adversely affect the environment or prevent receiving water from complying with other regulatory requirements.
- Ensure that sludge can be treated and disposed of safely in an environmentally acceptable manner.

Table 3: Emission limit values (ELV) for industries to discharge their effluents to collecting systems and Urban WWTPs which will not damage wastewater treatment processes and does not affect the recipient environment

Parameter	Unit	Limit values for effluent discharge *
<b>Aluminium - Al</b>	mg/L	25
<b>BOD5</b>	mg/L	COD concentration not to exceed four times BOD concentration
<b>Fluoride – F</b>	mg/L	6
<b>Sodium - Na</b>	mg/L	230
<b>Phenols</b>	mg/L	3
<b>Total O&amp;G</b>	mg/L	250
<b>Arsenic - As</b>	mg/L	0.1
<b>Benzene</b>	mg/L	0.05
<b>Beryllium - Be</b>	mg/L	0.5
<b>Cadmium - Cd</b>	mg/L	0.1
<b>Chloride - Cl</b>	mg/L	430
<b>Chlorine</b>	mg/L	0.5
<b>Chromium - Cr</b>	mg/L	0.5
<b>Cobalt - Co</b>	mg/L	1
<b>COD</b>	mg/L	2000
<b>Copper - Cu</b>	mg/L	0.5 to 1
<b>Cyanide</b>	mg/L	0.2 to 0.5
<b>AOX</b>	mg/L	1
<b>Lead - Pb</b>	mg/L	0.5
<b>Lithium - Li</b>	mg/L	0.3
<b>Manganese - Mn</b>	mg/L	1
<b>Mercury - Hg</b>	mg/L	0.05
<b>Mineral Oil</b>	mg/L	20

Parameter	Unit	Limit values for effluent discharge *
<b>Molybdenum - Mo</b>	mg/L	0.15
<b>Nickel - Ni</b>	mg/L	0.5
<b>Total phosphorous - (TP)</b>	mg/L	30
<b>pH</b>	units	6.0-10.0
<b>Polyphenols</b>	mg/L	100
<b>Selenium - Se</b>	mg/L	0.05
<b>Total Dissolved Solids (TDS)</b>	mg/L	3,500
<b>Temp</b>	C°	40° Celsius
<b>Tin - Sn</b>	mg/L	2
<b>Total Nitrogen - (TN)**</b>	mg/L	15-30
<b>Total Hydrocarbons</b>	mg/L	20
<b>Toxicity to fish eggs (Tegg)</b>		2
<b>Total Suspended Solids (TSS)</b>	mg/L	1000
<b>Vanadium - V</b>	mg/L	0.5
<b>Volatile halogenated hydrocarbons (VHHC)</b>	mg/L	0.1***
<b>Zinc - Zn</b>	mg/L	3

\* *The adoption and implementation of the ELVs shall respond to the respective industries. Different emission limit values, including for different parameters, may be adopted further to a risk-based assessment also in line with national regulations and procedures in collaboration with the operators of treatment plants<sup>3</sup>*

\*\* *Total nitrogen as the sum of ammonia nitrogen, nitrite nitrogen and nitrate nitrogen*

\*\*\* *Volatile halogenated hydrocarbons - sum of trichloroethene, tetrachloroethene, 1,1,1-trichloroethane, dichloromethane - calculated as chlorine*

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<sup>3</sup> *Definition to be reviewed by the legal officer in particular with regard to the “collaboration with the operators of treatment plants”*

## ANNEX II

### Guiding principles on reuse of reclaimed wastewater for aquifer recharge

Managed aquifer recharge (MAR) is defined as the intentional recharge of water to aquifers for subsequent recovery or environmental benefit. The purposes for undertaking managed aquifer recharge are as follows:

- Establish saltwater intrusion barriers in coastal aquifers.
- Provide storage for the recharged water for subsequent retrieval and reuse.
- Maintain groundwater dependent terrestrial and aquatic ecosystems.
- Dilute saline or polluted aquifers.
- Control or prevent ground subsidence.

#### Recharge methods:

1. **Surface spreading** – a method of recharge whereby the water moves from the land surface to the aquifer by infiltration and percolation through the vadose zone. When used as a recharge method, adverse effects to the soil and related dependent ecosystems should be avoided.
2. **Direct injection** – a method of directly pumping/ injecting water into the groundwater zone. Direct discharges of pollutants into groundwater is not allowed.

#### Risk assessment:

Health and environmental risk assessment is needed to define minimum quality requirements. The assessment will address appropriate health protection; provision of public confidence in reuse practices; avoiding adverse effects on groundwater, soils and related dependent ecosystems. The overall levels of health protection should be comparable for different water-related exposures (i.e. drinking water, and reclaimed water for irrigation of food crops).

### ANNEX III

#### **Monitoring frequencies of pollutants discharged directly to the environment; or destined for reuse in agriculture; or discharged from industrial facilities to collecting systems**

Monitoring the treated effluents discharge from urban WWTPs is used to determine compliance with emission limit values for discharge to the environment; to reuse in agriculture irrigation; or for aquifer recharge (Annex I.A, Annex I.B, Annex I.C).

Monitoring frequencies need to be sufficient to characterize the effluent quality and to detect events of noncompliance, considering the need for data and, as appropriate, the potential cost. Monitoring frequency should be determined on a case-by-case basis, consider the variability of the concentration of various parameters. A highly variable discharge should require more frequent monitoring than a discharge that is relatively consistent over time (particularly in terms of flow and pollutant concentration).

Frequency requirements may be reduced based on a demonstration of excellent performance. Facilities can demonstrate good performance by meeting a set of compliance and enforcement criteria and demonstrating their ability to discharge pollutants below the necessary levels consistently.

The sampling frequency for monitoring of the discharge effluents may be defined to the extent possible as per the tables below:

*Table 4: Recommended sampling frequency for treated effluents at the point of discharge*

Parameter	Monitoring Frequency		Grab / Composite sample
	Large UWWTP (more than 5,000 p.e.)	Small UWWTP (less than 5,000 p.e.)	
Heavy metals	Once a quarter	Once a year	Composite sample
EC + pH	Continuous monitoring	Once a month	Grab samples
BOD, COD	Once a week	Once a month	Composite sample
Turbidity	Once a week	Once a month	Grab samples
TSS	Every two weeks	Once a month	Composite sample
Nutrients (N, P, K)	Once a week	Once a month	Composite sample
Pathogens	Every two weeks	Once a month	Grab samples
Mineral Oil, Phenol, Total Hydrocarbons	Once a month	Once a month	Grab samples

*Table 5: Minimum frequency for reclaimed wastewater monitoring for agricultural irrigation*

Parameter	Monitoring Frequency for reclaimed wastewater quality classes	
	Class A	Class B
BOD	Once a week	Once a month
TSS	Once a week	Once a month
Turbidity	Continuous	Once a month
Escherichia coli	Once a week	Twice a month
Legionella spp (when applicable)	Once a week	Once a week
Intestinal nematodes (when applicable)	Twice a month or frequency determined according to the number of eggs in wastewater	
Heavy metals	Once a quarter	Once a year
EC and pH	Continuous monitoring	Once a month
Nutrients (N, P, K)	Once a week	Once a month

Table 6: Recommended sampling frequency per year for industrial wastewater at the point of discharge to the collecting systems and urban WWTP

No.	Industrial Activities	Sampling frequency (*)
1	Wastewater containing mineral oil	4 Once every three months
2	Domestic and communal wastewater (function halls, restaurants, shopping malls, hotels etc.)	4 Once every three months
3	Food Sector - Animal and vegetable products	4 Once every three months
4	Food Sector - Meat industry & Fish processing	4 Once every three months
5	Textile sector - manufacturing and finishing	4 Once every three months
6	Metals production and processing	6 Once every two months
7	Laundry Facilities	4 Once every three months
8	Gas stations	4 Once every three months
9	Agriculture: chicken farms, pig farms, fish farms, etc.	4 Once every three months
10	Leather production, fur processing, leather fibreboard manufacturing	4 Once every three months
11	Waste and wastewater management	Waste – 4 Once every three months Hazardous waste – 6 Once every two months]
12	Production of printing blocks, publications and graphic-arts products	4 Once every three months
13	Chemical industry including chemicals, pharmaceuticals, fertilizers, pesticides, detergents, solvents, petrochemicals, Cosmetic, plastic etc.	Water consumption: - less than 5,000 m <sup>3</sup> /year – 6 one per every two months - higher than 5,000 m <sup>3</sup> /year – 12 once per a year
14	Hospitals	4 Once every three months

\* The sampling rate should reflect the fluctuation of the effluent

## **Regional Plan on Sewage Sludge Management**

## **Regional Plan for Sewage Sludge Management**

### **ARTICLE I Definition of Terms**

For the purpose of this Regional Plan for the Sewage Sludge Management; hereinafter referred to as the “Regional Plan”:

- (a) “Anaerobic digestion” is the biological conversion of organic matter to biogas and residual solids at temperatures between 20°C and about 40°C, typically 37°C with a mean residence time of 15 to 30 days (Mesophilic) or that takes place between 49°C and 57°C (thermophilic);
- (b) "Best Available Techniques (BAT)" as defined in Annex IV for the Land-Based Source and Activities (LBS) Protocol;
- (c) "Best Environmental Practice (BEP)" as defined in Annex IV for the Land-Based Source and Activities (LBS) Protocol;
- (d) “Biosolids” are organic-based materials from industrial or municipal wastewater sludge and their derived products, in the form of solids, semisolids, semi-liquids (pasty), and liquids which have been treated to meet specific standards, guidelines or requirements;
- (e) "Collecting system" means a system of conduits which collects and conducts urban wastewater;
- (f) “Composting” is the natural aerobic biological process, carried out under controlled conditions, which converts organic material into a stable humus-like product;
- (g) “Domestic wastewater” means wastewater from residential settlements and services which originates predominantly from the human metabolism and from household activities;
- (h) “Industrial wastewater” means any wastewater which is discharged from premises used for carrying on any trade or industry, other than domestic wastewater and run-off rainwater;
- (i) “Primary sludge” is sludge from primary settling tanks, typically grayish and slimy in nature, and, in most of the cases, has an extremely offensive odor. Primary sludge can be readily digested under suitable conditions of operation;
- (j) “Primary treatment” means treatment of urban wastewater by a physical and/or chemical process involving settlement of suspended solids, or other processes in which the BOD<sub>5</sub> of the incoming wastewater is reduced by at least 20 percent before discharge and the total suspended solids of the incoming wastewater are reduced by at least 50 percent;
- (k) “Secondary sludge (activated sludge)” is the sludge particles produced in raw or settled wastewater by the growth of organisms in aeration tanks in the presence of dissolved oxygen. The term activated comes from the fact that the particles are teeming with bacteria, fungi, and protozoa. Activated sludge is different from primary sludge in that the sludge particles contain many living organisms which can feed on the incoming wastewater;
- (l) “Secondary treatment” means treatment of urban wastewater by a process generally involving biological treatment with a secondary settlement or other process so that the treatment results in a minimum reduction of the initial load of 70 to 90 percent of BOD<sub>5</sub>;
- (m) “Sludge incineration (waste to energy)” is a two-step process involving drying and combustion after a preceding dewatering process, such as filters, drying beds, or centrifuges;
- (n) “Tertiary treatment" means treatment of urban wastewater by processes generally involving physical, chemical, biological and other procedures so that the treatment results in reduction of phosphorus and nitrogen, as well as disinfection;
- (o) "Urban wastewater" means the domestic wastewater or the mixture of domestic wastewater with industrial wastewater and/or run-off rainwater;



- (p) “Wastewater Treatment Plant (WWTP)” means systems used to treat urban wastewater using physical, chemical and/or biological techniques.

## **ARTICLE II**

### **Scope and Objective**

1. The area to which the Regional Plan applies is the area defined in accordance with Article 3 of the LBS Protocol, consisting of the Mediterranean Sea Area as defined in Article 1 of the Convention; the hydrologic basin of the Mediterranean Sea Area; waters on the landward side of the baselines from which the breadth of the territorial sea is measured and extending, in the case of watercourses, up to the freshwater limit; brackish waters, coastal salt waters including marshes and coastal lagoons; and ground waters communicating with the Mediterranean Sea.
2. The Regional Plan shall apply to the treatment, disposal and use of sewage sludge from Urban Wastewater Treatment Plants.
3. The objective of the Regional Plan is to ensure effective reuse of beneficial substances and exploitation of energy potential of sewage sludge, while preventing harmful effects on human health and the environment.

## **ARTICLE III**

### **Preservation of Rights**

4. The provisions of this Regional Plan shall be without prejudice to stricter provisions respecting the management of sewage sludge from urban wastewater treatment plants contained in other existing or future national, regional or international instruments or programs.

## **ARTICLE IV**

### **Guiding Principles**

5. The Regional Plan measures are formulated to ensure the application of the following principles:
  - i. Sewage sludge shall meet the required quality criteria suitable for its intended use or disposal;
  - ii. Management alternatives are prioritized for beneficial use of sewage sludge in agricultural land applications in order to minimize landfilling and adverse environmental effects;
  - iii. Since sewage sludge can have valuable agronomic properties reducing dependence on fertilizers, its application is encouraged in agriculture subject to adequate treatment and quality standards for human health and environment protection.
  - iv. Sewage sludge can be used in other applications such as forests, mine reclamation sites, and other disturbed lands, parks, and golf courses, subject to adequate treatment and quality standards for human health and environment protection;
  - v. Use of sewage sludge does not impair the quality of the soil and of agricultural products;
  - vi. Use of sewage sludge in agriculture is regulated in such a way as to prevent harmful effects on soil, water bodies, vegetation, animals and humans;
  - vii. Sewage sludge may be used as an alternative fuel; energy production; and for incineration and co-incineration and other proven applications.

**ARTICLE V**  
**Measures**

**I. Treatment of sewage sludge**

- 6. The Contracting Parties shall ensure that all required sludge treatment processes are carried out in line with common agreed guidelines, in order to obtain treated sludge of quality suitable for their specific use in, inter alia:
  - i. Agricultural land application as a fertilizer or for land reclamation;
  - ii. Energy recovery; and
  - iii. [Cement industry].

**II. Agricultural use**

- 7. For the application of sludge under specific conditions of land application, the Contracting Parties shall apply adequate treatment to limit pathogen contents in biosolids destined for agricultural applications. To this aim, the Contracting Parties shall set classes for sludge with limit values for pathogen contents for biosolids to ensure that use would not affect human health and the environment. The following two “biosolids classes” and corresponding limit values for pathogen content for biosolids [may be]<sup>4</sup> [shall] be adopted by the Contracting Parties at the latest by [2023]:
  - i. Class ‘A’ biosolids suitable for use as fertilizer for agricultural crops having met the pathogen reduction requirements set in Table 1 by treatment processes that include a suitable combination of composting, heat drying, heat treatment, thermophilic anaerobic digestion, beta or gamma ray irradiation and pasteurization, or any other equivalent treatment technologies.
  - ii. Class ‘B’ biosolids suitable for use as fertilizer for non-food crops having met the pathogen reduction requirements set in Table 1 by treatment processes that include a suitable combination of aerobic digestion, composting, anaerobic digestion, lime stabilization and air drying, or any other equivalent treatment technologies.

Table 1: Limit values for pathogen content for biosolids classes				
Class	Faecal Coliforms [E. Coli]	Salmonella sp.	Enterovirus*	Helminths ova*
<b>Class A</b>	< 1000 MPN/g DM	< 3 MPN/4 g DM	1 PFU/4 g DM**	1 viable/4 g DM
<b>Class B</b>	< 2,000,000 MPN/g DM***			

\* These parameters may be included based on specific local conditions and if monitored, lower frequencies apply.  
 \*\* PFU: Plaque Forming Unit  
 \*\*\* Geometric mean of seven samples

- 8. The Contracting Parties shall apply adequate treatment to limit concentrations of heavy metals in biosolids destined for agricultural applications. To this aim, the Contracting Parties shall set limit values for heavy metals to ensure that use would not affect human health and the environment.

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<sup>4</sup> Need to consult legal officer to ensure that this modification does not result in not adopting any class (and if Contracting party had to choose a Class, it should be class A)

The following limit values for heavy metals in biosolids (Table 2) and heavy metals in soil (Table 3) [shall be adopted at the latest by 2023].

Table 2: Limit values for concentration of heavy metals in biosolids (mg.kg <sup>-1</sup> DS) *							
Range**	Cadmium	Chromium	Copper	Mercury	Nickel	Lead	Zinc
<b>Lower</b>	20	1000	1000	16	300	750	2500
<b>Upper</b>	40	1500	1750	25	400	1200	4000

\* Different emission limit values, including for other parameters, may be adopted further to a risk-based assessment provided that there is no negative impact on the recipient environment

\*\* To be defined based on local conditions including soil pH

Table 3: Limit values for concentrations of heavy metals in soil to which biosolids is applied (mg.kg <sup>-1</sup> DS) *							
Range**	Cadmium	Chromium	Copper	Mercury	Nickel	Lead	Zinc
<b>Lower</b>	1	100	50	1	30	50	150
<b>Upper</b>	3	150	140	1.5	75	300	300

\* Different emission limit values, including for other parameters, may be adopted further to a risk-based assessment provided that there is no negative impact on the recipient environment

\*\* To be defined based on local conditions including soil pH

9. The Contracting Parties shall specify the conditions for use of sludge in its different states (stabilized, treated, untreated) taking into consideration the proximity of sludge application to various types of human activities and civil structure facilities/natural features. To this aim, the Contracting Parties agree to formulate a common guideline.
10. In the event that limit values set in Tables 1 to 3 cannot be met, the Contracting Parties shall apply alternative means to agricultural use including incineration and regulated landfilling ensuring in both cases, that there is no negative impact on the environment (particularly for water sources) and human health, and that disposal of sewage sludge in coastal areas is prohibited.
11. The Contracting Parties shall apply adequate treatment processes to reduce volatile organic compounds and diminish possible odor emissions in the different stages of sludge treatment, transport and application in agriculture and other suitable uses.

### III. Sewage sludge use and energy/nutrient recovery

12. The Contracting Parties shall establish the required infrastructure for the implementation of the requirements [of the applicable measures]<sup>5</sup> of this Regional Plan with regards to the use for agricultural land applications and/or for energy/nutrient recovery at the latest by [2035].

### IV. Considerations for reducing impacts of climate change

13. The Contracting Parties shall reduce energy costs and increase water savings during treatment by using BAT and applying BEP including the use of alternative and renewable energy sources based on advanced technologies such as anaerobic digestion, pyrolysis/gasification, mass burning and other technologies.

<sup>5</sup> Secretariat to develop proper text for this clause in consultation with the legal officer

14. The Contracting Parties shall implement technologies targeting energy efficient treatment of sludge such as pretreatment of sludge, solar drying, bio-drying, composting, etc.
15. The Contracting Parties shall promote implementation of adaptation measures for climate change protection including:
  - i. Taking advantage of the biosolids as an important source of nutrients and organic matter;
  - ii. Using biosolids as soil amendment to combat desertification; improve infiltration of water (precipitation or irrigation water); ensure better drainage in high rainfall areas; and decrease surface water runoff;
  - iii. Increasing on-site carbon sequestration potential.

#### V. Monitoring

16. [The Contracting Parties shall take measures to ensure monitoring of quality of sewage sludge in (i) the treatment plant and (ii) after treatment with the aim of determining sludge class for use in agriculture or for incineration, and accordingly, to select the appropriate monitoring programme.]
- 16.bis [The Contracting Parties shall take measures to ensure monitoring of the quality of sewage sludge in the WWTP or after treatment outside the WWTP, whichever constitutes the last treatment process before use, with the aim of determining sludge class as provided for in Article IV of this Regional Plan, and accordingly, to select the adequate monitoring programmes to the extent possible as indicated in Table [4] on the frequency of monitoring for pollutants, pathogen densities, and vector attraction reduction in sewage sludge. To this aim, the Contracting Parties collaborate to formulate common agreed technical guidelines on routine monitoring of treated sewage sludge.]

Table 4: Frequency of monitoring for pollutants, pathogen densities, and vector attraction reduction in Sewage Sludge		
Amount of biosolids [Dry matter] Tons per 365-day period	Tons per day	Frequency
> 0 to < 290	> 0 to < 0.80	Once per year
≥ 290 to < 1,500	≥ 0.80 to < 4.10	Once per quarter (4 times per year)
≥ 1,500 to < 15,000	≥ 4.10 to < 41	Once per 60 days (6 times per year)
≥ 15,000	≥ 41	Once per month (12 times per year)

### ARTICLE VI

#### Technical Assistance, Transfer of Technology and Capacity Building

17. For the purpose of facilitating the effective implementation of the measures and monitoring obligations under Article V of this Regional Plan, the Contracting Parties are urged to consider the techniques provided for in this Plan and to exchange and share best practices directly or with the support of the Secretariat including BAT, BEP, sustainable consumption and production, circular economy, resource efficiency, WEF Nexus in the design, construction, operation and maintenance of the urban wastewater treatment plants.

**ARTICLE VII**  
**Timetable for Implementation**

18. The Contracting Parties shall implement the measures included in this Regional Plan as per the timelines associated with these measures.

**ARTICLE VIII**  
**Reporting**

19. The Contracting Parties shall report on implementation of measures stipulated in this Regional Plan in line with the reporting requirement and timelines provided in Article 26 of the Convention and Article 13, paragraph 2(d) of the LBS Protocol.

**ARTICLE IX**  
**Entry into Force**

20. The present Regional Plan shall enter into force and become binding on the 180<sup>th</sup> day following the day of notification by the Secretariat in accordance with Article 15, paragraphs 3 and 4, of the LBS Protocol.

**Appendix 3**  
**Updated Regional Plan on Marine Litter Management in the Mediterranean**

## **Updated Regional Plan for Marine Litter Management in the Mediterranean in the Framework of Article 15 of the LBS Protocol**

### *Part I – General provisions*

#### **ARTICLE 1**

##### **Rationale for the Regional Plan**

21. Marine litter may have significant implications for the marine and coastal environment at a global level. These impacts are environmental, economic, health and safety and cultural, rooted in our prevailing production and consumption patterns. The problem originates mostly from land-based activities and sea-based activities, as well as lack of governmental financial resources, general lack of understanding of the public's co-responsibility, and the optimisation of the application of legal enforcement systems could limit pollution.
22. The rationale for the preparation of this Regional Plan is to improve the quality of the marine and coastal environment in accordance with the provisions of the LBS Protocol and to achieve the goals set by the decisions of the 17<sup>th</sup> meeting of the Contracting Parties in 2012, Decision IG.20/4: "Implementing MAP ecosystem approach roadmap: Mediterranean Ecological and Operational Objectives, Indicators and Timetable for implementing the ecosystem approach roadmap" and Decision IG 20/10: "Adoption of the Strategic Framework for Marine Litter management," at the considerable lower cost than with the no action scenario.

#### **ARTICLE 2**

##### **Area and Scope of Application**

23. The area to which this Regional Plan applies is the area defined in Article 3 of the LBS Protocol paragraphs (a), (c) and (d).<sup>6</sup> The Regional Plan shall apply to discharges referred to in Article 4(a)<sup>7</sup> of the LBS Protocol and any operational discharge from ships, platforms and other man-made structures at sea.

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<sup>6</sup> Article 3 of the LBS Protocol: Protocol Area:

*The area to which this Protocol applies (hereinafter referred to as the "Protocol Area") shall be:*

- (a) The Mediterranean Sea Area as defined in article 1 of the Convention.*
- (c) Waters on the landward side of the baselines from which the breadth of the territorial sea is measured and extending, in the case of watercourses, up to the freshwater limit.*
- (d) Brackish waters, coastal saltwater including marshes and coastal lagoons, and ground waters communicating with the Mediterranean Sea.*

<sup>7</sup> Article 4 of the LBS Protocol Application:

*This Protocol shall apply: (a) To discharges originating from land-based point and diffuse sources and activities within the territories of the Contracting Parties that may affect directly or indirectly the Mediterranean Sea Area. These discharges shall include those which reach the Mediterranean Area, as defined in article 3(a), (c) and (d) of this Protocol, through coastal disposals, rivers, outfalls, canals, or other watercourses, including ground water flow, or through run-off and disposal under the seabed with access from land.*

### ARTICLE 3 Definition of Terms

24. For the purpose of this Regional Plan:

- a) *Barcelona Convention* means the Convention for the Protection of the Marine Environment and the Coastal Region of the Mediterranean, 1995 hereinafter referred to as the Barcelona Convention;
- b) *LBS Protocol* means the Protocol for the Protection of the Mediterranean Sea against Pollution from Land-Based Sources and Activities, 1996, hereinafter referred to as the LBS Protocol;
- c) *LBS National Action Plan* means the national action plans containing measures and timetables for their implementation developed by the Contracting Parties in accordance with Article 5 of the LBS Protocol as endorsed by the 14<sup>th</sup> and 19<sup>th</sup> meetings of the Contracting Parties with the view to implement the Strategic Action Programme (SAP-MED) to combat land-based sources in the Mediterranean adopted by the Contracting Parties in 1997 and UNEP/MAP's ecosystem approach-based ecological objectives on pollution and litter;
- d) *Secretariat* means the body referred to in Article 17 of the Barcelona Convention;
- e) *Marine litter*, regardless of the size, means any persistent, manufactured or processed solid material, discarded, disposed of, or abandoned in the marine and coastal environment.
- f) *Micro litter* means the fraction of marine litter of less than 5 mm in size with a further division into *Large Micro Particles* (1-5 mm) and *Small Micro Particles* (<1 mm);
- g) *Microplastics*, [most commonly defined as manmade solid particles composed of mixtures of polymers and functional additives, smaller than 5 mm];<sup>8</sup>
- h) *Primary microplastics* are tiny particles designed for direct commercial use (such as cosmetics, detergents and paints components), or for indirect use (such as pre-production pellets);
- i) *Secondary microplastics* means the fraction of microplastics in the marine environment which results from the breakdown of larger plastic items into numerous tiny fragments due to mechanical forces and/or photochemical processes, as well as from other degradation sources such as water bottles, fibres in wastewater from washing clothes and particles of rubber lost from tyres due to normal wear;
- j) *Abandoned, lost or otherwise discarded fishing gear or parts thereof (ALDFG)* or *Derelict fishing gear (DFG)* are the collective terms for commercial and recreational fishing gear or aquaculture-related items that have been abandoned, lost or otherwise discarded into the marine environment;
- k) *Single Use Plastics (SUPs)*: means an item or product that is made wholly or partly from plastic and that is not conceived; designed or placed on the market to accomplish, within its life span, multiple trips or rotations by being returned to a producer for refill or re-used for the same purpose for which it was conceived;

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<sup>8</sup> It is proposed to replace with the following: [Microplastics' means particles containing solid polymer, to which additives or other substances may have been added, and where  $\geq 1\%$  w/w of particles have (i) all dimensions  $\leq 5\text{mm}$ , or (ii) a length of  $\leq 15\text{mm}$  and length to diameter ratio of  $>3.3$ ]



- l) *Fishing gear*: [gear used in fisheries and aquaculture-related activities];<sup>9 10</sup>
- m) *Extended Producer Responsibility* [means a strategy to add the environmental costs associated with a product throughout the product life cycle to the market price of that product];<sup>11</sup>
- n) *Best Available Techniques (BAT)* as defined in Annex IV for the Land-Based Source and Activities (LBS) Protocol;
- o) *Best Environmental Practice (BEP)* as defined in Annex IV for the Land-Based Source and Activities (LBS) Protocol;
- p) *Circular economy*, [as approach contributing to Sustainable Consumption and Production patterns, involves shifting to a system keeping products and materials in use, as long as possible, which favors sharing, leasing, reusing, repairing, refurbishing and recycling instead of throw-away or take-make-dispose models].<sup>12</sup>
- q) *Litter monitoring* means repeated surveys of beaches, seabed, water column, surface waters and biota to determine litter types and quantities in a representative manner such that information can be compared with baseline data to follow trends in line with established threshold values to achieve GES;
- r) *Garbage* includes all kinds of food, domestic and operational waste, all plastics, cargo residues, incinerator ashes, cooking oil, fishing gear, and animal carcasses generated during the normal operation of the ship and liable to be disposed of continuously or periodically. Garbage does not include fresh fish and parts thereof generated as a result of fishing activities undertaken during the voyage, or as a result of aquaculture activities;
- s) *Leakage* means unintentional disposal of wastes into the marine environment.

## ARTICLE 4 Objectives and Principles

### Objectives

25. The main objectives of the Regional Plan are to:

- a) Prevent and reduce to the minimum marine litter pollution in the Mediterranean and its impact on ecosystem services, habitats, species (in particular the endangered species), public health and safety, as well as reduction of the socioeconomic costs it causes;

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<sup>9</sup> It is proposed to replace this definition as follows : **‘[Fishing gear’ refers to any physical device or part thereof or combination of items that may be placed on or in the water or on the seabed with the intended purpose of capturing or controlling for subsequent capture or harvesting marine organisms, in accordance with MARPOL Annex V].**

<sup>10</sup> Another option for this definition: **‘[Fishing gear’ means any item or piece of equipment that is used in fishing or aquaculture to target, capture or rear marine biological resources or that is floating on the sea surface, and is deployed with the objective of attracting and capturing or of rearing such marine biological resources]**

<sup>11</sup> It is proposed to replace this definition as follows: **‘[Extended producer responsibility scheme’ means a set of measures taken by Contracting Parties to ensure that producers of products bear financial responsibility or financial and organisational responsibility for the management of the waste stage of a product’s life cycle.]’**

<sup>12</sup> It is proposed to replace this definition as follows: **Circular economy as approach contributing to Sustainable Consumption and Production patterns, involves shifting to a system keeping products and materials in use [in the economy, as long as possible, which favors [the reduction of generation of waste by] sharing, leasing, reusing, repairing, refurbishing and [recovering unavoidable wastes by] recycling, instead of throw-away or take-make-dispose models.**

- b) Remove to the extent possible already existent marine litter by using environmentally sound methods;
- c) Ensure that the management of marine litter in the Mediterranean is performed in accordance with accepted international standards and approaches as well as those of relevant regional organizations and as appropriate in harmony with programmes and measures applied in other seas;
- d) Enhance knowledge and understanding on marine litter and its impacts;
- e) Support Contracting Parties in the development, implementation, and coordination of programmes for litter reduction, including National Action Plans (NAPs).

### **Principles**

26. In implementing the Regional Plan, the Contracting Parties shall be guided by:
- a) *Integration* by virtue of which marine litter management shall be an integral part of the solid waste management and other relevant strategies;
  - b) *Prevention* by virtue of which any marine litter management measure should aim at addressing the prevention of marine litter generation at the source;
  - c) *Precautionary principle* by virtue of which where there are threats of serious or irreversible damage, lack of full scientific certainty shall not be used as a reason for postponing cost-effective measures to prevent environmental degradation;
  - d) *Polluter-pays principle* by virtue of which the costs of pollution prevention, control and reduction measures are to be borne by the polluter, with due regard to the public interest;
  - e) *Ecosystem-based approach* by virtue of which the cumulative effects of marine litter on marine and coastal ecosystem, habitats and species with other contaminants and substances that are present in the marine environment should be fully taken into account;
  - f) *Public participation and stakeholder involvement*;
  - g) *Sustainable Consumption and Production* by virtue of which current unsustainable patterns of consumption and production must be transformed to sustainable ones that decouple human development from environmental degradation, in particular through the use of systemic approaches addressing environmental impacts along the entire value chain, including circular economy;

## **ARTICLE 5**

### **Preservation of Rights**

27. The provisions of this Regional Plan shall be without prejudice to stricter provisions respecting marine litter management measures contained in other existing national, regional or international instruments or programmes.

## ***Part II – Measures and Operational Targets***

## **ARTICLE 6**

### **Coherence and Integration of Measures**

28. The Contracting Parties shall make best effort that the measures provided for in Articles 7 to 10 are implemented, as specified in the respective articles, in a coherent manner to achieve good

environmental status and relevant targets on marine litter. Various actors shall be involved in the development and implementation of agreed measures as provided for in Article 17.

## ARTICLE 7

### **Integration of marine litter measures into the LBS National Action Plans (LBS NAPs)**

29. The Contracting Parties in accordance with Article 5 of the LBS Protocol shall elaborate and implement, individually or jointly, as appropriate, national and regional action plans and programmes, containing measures and timetables for their implementation. In doing so, the Contracting Parties shall consider updating periodically the LBS NAPs to integrate marine litter in accordance with the provisions of this Regional Plan and other means to perform their obligations.
30. The LBS National Action Plan shall include:
  - a) Development and implementation of appropriate policy, legal instruments and institutional arrangements, including adequate management plans for solid waste also including those originating from sewer and storm water systems, which shall incorporate marine litter prevention and reduction measures
  - b) Monitoring and assessment programmes for marine litter;
  - c) Measures and targets to prevent and reduce marine litter;
  - d) Measures and targets to improve/increase plastic waste collection and recycling;
  - e) Programmes of removal and environmentally sound disposal of existing marine litter according to the national legislation about management of this kind of waste; and
  - f) Awareness raising and education programmes.

## ARTICLE 8

### **Legal and Institutional Aspects**

31. For the purpose of implementing the Regional Plan, the Contracting Parties shall adopt, as appropriate, the necessary legislation and/or establish adequate institutional arrangements to ensure efficient marine litter including plastic waste and microplastics reduction and the prevention of its generation. To this aim the Contracting Parties shall endeavor to ensure:
  - a) Institutional coordination, where necessary, among the relevant national policy bodies and relevant regional organizations and programmes, in order to promote integration;
  - b) Close coordination and collaboration between national, regional and local authorities in the field of marine litter management;
32. By the year 2028, at the latest, the Contracting Parties shall take adequate regulatory measures to integrate the informal sector<sup>13</sup> into regulated waste collection and recycling schemes;
33. By the year 2025, the Contracting Parties shall establish, as appropriate, a regulatory framework for compostable plastics to be integrated into national waste management policies;

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<sup>13</sup> One possible definition of the informal sector in Paragraph 13 could be: *Informal recycling sector (IRS) refers to individuals or community enterprises who are involved in the recovery of material and waste management activities which are not necessarily sponsored, financed, recognized, supported, organized, or acknowledged by the formal solid waste authorities*

34. The Contracting Parties shall give due consideration to the implementation of the relevant related provisions of the Protocols<sup>14</sup> of the Barcelona Convention affecting marine litter management to enhance efficiency, synergies and maximize the results.

## ARTICLE 9 Prevention of Marine Litter

35. In conformity with the objectives and principles of the Regional Plan the Contracting Parties shall:
- 15.1 Apply to the extent possible instruments needed to regulate and prevent marine litter pollution including plastic waste from land-based and sea-based sources, in particular the implementation of **economic instruments**, bans and design requirements:
- a) Extended Producer Responsibility
  - b) Safe/formal markets for recycled plastics that incentivize the collection of plastic waste and, hence, reduce marine litter generation;
  - c) Fiscal and economic incentives or other equally effective measures (e.g. market restrictions) to promote the phasing out,-of light weight plastic carrier bags and other single-use plastic items which are most found and cause the most impact on the marine and coastal environment;
  - d) Innovative business practices to prevent plastic waste generation in line with the Extended Producer Responsibility approach by:
    - i. Establishment of Deposits, and Refund System for expandable polystyrene boxes in the commercial and recreational fishing and aquaculture sectors.
    - ii. Establishment of Deposits, and Refund System for food and beverage packaging, prioritizing when possible their reuse and recycling including deposit refund systems for bottles, containers and cans (e.g. glass, plastic and aluminium).
  - e) Best practices to create incentives for:
    - i. Fishing vessels to retrieve derelict fishing gear, collect other items of marine litter, and deliver it to port reception facilities;
    - ii. Delivering waste in port reception facilities such as the non-special fee system.
- 15.2 Apply by the year [2030] [2025], prevention measures aiming to achieve, to the extent possible, **a circular economy for plastics**:
- a) [Put in place a system to] <sup>15</sup> identify on a regular basis the sources of plastic litter in the coastal and marine environment, including primary and secondary microplastics industrial pellets and personal care products-related microparticles fibers from clothing, microbeads in cosmetics, wear and tear from car tires;

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<sup>14</sup> Specifically in the framework of the Protocol Concerning Cooperation in Preventing Pollution from Ships and, in Cases of Emergency, Combating Pollution of the Mediterranean Sea, 2002 (Port reception facilities); Protocol for the Prevention and Elimination of Pollution of the Mediterranean Sea by Dumping from Ships and Aircraft or Incineration at Sea, 1995 (waste dumping prohibition); Protocol concerning Specially Protected Areas and Biological Diversity in the Mediterranean, 1995 (Regional Plans to protect endangered species; establishment of SPA and SPAMIs); Protocol for the Protection of the Mediterranean Sea against Pollution Resulting from Exploration and Exploitation of the Continental Shelf and the Seabed and its Subsoil, 1994 (prohibition of the disposal of garbage from offshore installations); and the Protocol on the Prevention of Pollution of the Mediterranean Sea by Transboundary Movement of Hazardous Wastes and their Disposal, 1996.

<sup>15</sup> Measure to be reviewed in the MED POL FP Meeting

- b) Regulate the use of primary microplastics, as appropriate, by promoting voluntary commitments (e.g. certification schemes) or other actions (e.g. legal instruments);
- c) Implement Sustainable Procurement Policies prioritizing the phase out of single-use plastic products and promoting reuse options. [To this aim, the Contracting Parties may consider the list of Single Use Plastic items presented in Annex I to the regional Plan];<sup>16</sup>
- d) Establish voluntary agreements with retailers and supermarkets to set an objective of reduction of light weight plastic carrier bags consumption as well as selling dry food or cleaning products in bulk and refill special and reusable containers;
- e) Establish procedures and manufacturing methodologies together with the plastic industry in order to minimize the decomposition characteristics of plastic and reduce microplastic;
- f) Identify [Phase out] single-use plastic products of concern and implement environmental sound measures to phase out consumption and production and minimize the risk to end up in the marine environment. To this aim, the Contracting Parties may consider the list of Single Use Plastic items presented in Annex I to the Regional Plan;
- [(f.bis) Identify single-use plastic products of concern and implement sound measures to phase out consumption and production and minimise the risk to end up in the marine environment. To this aim, the Contracting Parties may consider the list of Single Use Plastic items presented in Annex I to the Regional Plan;]<sup>17</sup>
- g) Set targets to phase out production and use of nonreusable, non-recyclable, and non-compostable plastic products;
- h) Take adequate measures to increase the reuse and recycling of plastics toward total plastic products;
- i) Phase-out chemical additives used in plastic products, that may have serious and often irreversible effects on human health and the environment, and in particular those chemicals already listed under the Stockholm Convention contained as annex II of this Regional Plan;
- j) Promote the use of recycled plastics and disincentivize the use of plastic, resins and additives which hinder products recyclability;
- k) [Substitute] [Endeavor to substitute] plastics causing substantial impacts on the marine environment with materials with net positive impacts verified by life cycle assessment;
- l) Implement standards for product labelling (including on packaging) to provide consumers with clear and reliable information on sustainable choices;
- m) Establish dedicated collection and recycling schemes supported by Extended Producer Responsibility approach for end-of-life products;
- n) Implement measures to minimize the amount of marine litter associated with fishing/aquaculture;
- o) Scale-up and replicate sustainable models providing solutions to reduce single-use plastic products consumption.

### 15.3 Land-based Sources

- a) By the year 2025, base urban solid waste management on reduction at source, applying the following waste hierarchy as a priority order in waste prevention and management legislation and policy: prevention, preparing for re-use, recycling, other recovery, e.g. energy recovery and environmentally sound disposal;

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<sup>16</sup> Measure to be reviewed in the MAP FP Meeting

<sup>17</sup> Measure to be reviewed in the MED POL FP Meeting

- b) By the year 2019, implement adequate waste reducing/reusing/recycling measures in order to reduce the fraction of plastic packaging waste that goes to landfill or incineration without energy recovery;
- c) Take the necessary measures by the year 2020 to close to the extent possible the existing illegal dump sites on land in the area of the application of this Regional Plan;
- d) Take the necessary measures by 2027 to identify and, to the extent possible, restore and contain, the coastal landfills that are a source of marine litter;
- e) Apply in accordance with national and regional legislation enforcement measures to combat dumping, littering on the beach, illegal sewage disposal from land sources in the sea, the coastal zone and rivers in the area of the application of this Regional Plan;
- f) [Taking into consideration the occurrence and extent of marine litter accumulations], identify and assess by the year 2025, impacts of these accumulations in upstream regions of rivers and their tributaries, and apply measures to prevent or reduce their leakage into the Mediterranean, particularly during flood seasons and other extreme weather events.
- g) Apply enforcement measures to prevent, reduce and sanction illegal dumping and illegal littering in accordance with national and regional legislation, in particular on coastal zones and rivers in the area of the application of the Regional Plan.

#### Sea-based Sources

- h) In accordance with Article 14 of the Prevention and Emergency Protocol, explore and implement by 2017, to the extent possible, ways and means to charge reasonable cost for the use of port reception facilities or when applicable, apply No-Special-Fee system. The Contracting Parties shall also take the necessary steps to provide ships using their ports with updated information relevant to the obligations arising from Annex V of MARPOL Convention and from their legislation applicable in the field;
- i) Implement targeted measures by 2025 aiming at preventing and reducing marine litter impact in Marine Protected Areas (MPAs) and Specially Protected Areas of Mediterranean Importance (SPAMIs);
- j) Explore and implement to the extent possible by the year 2017 “Gear marking to indicate ownership” concept and “reduced fishing catches through the use of environmental neutral upon degradation of nets, pots and traps concept,” in consultation with the competent international and regional organizations in the fishing sector;
- k) Apply by the year 2020 the cost-effective measures to prevent any marine littering from dredging activities taking into account the relevant guidelines adopted in the framework of Dumping Protocol of the Barcelona Convention;
- l) Take the necessary measures to ensure that cruise ships flying their flag or entering their ports implement the procedures for minimizing, collecting, storing, processing and disposing of garbage;
- m) Take the necessary measures to promote best practices to prevent plastic waste and particularly single use plastic products in tourism and leisure activities including cruise shipping, including through regional cooperation;
- n) Implement measures on prevention, response and remediation regarding litter from maritime accidents, including containers lost at sea.

## ARTICLE 10

### Removing Existing Marine Litter and its Environmentally Sound Disposal

- 16 The Contracting Parties shall, where it is environmentally sound and cost effective, remove existing accumulated litter, subject to Environmental Impact Assessment procedure, in particular from Marine Protected Areas (MPAs) and Specially Protected Areas of Mediterranean Importance (SPAMI) and litter impacting endangered species listed in Annexes II and III of the SPA and Biodiversity Protocol. To this aim the Contracting Parties undertake to explore and implement to the extent possible the following measures by the year 2019. To this aim the Contracting Parties undertake to explore and implement to the extent possible the following measures by the year 2019:
- a) Identify, in collaboration with relevant stakeholders, accumulations/hotspots of marine litter at sea and implement, as appropriate, national programmes on their regular removal and sound disposal;
  - b) Implement National Marine Litter Cleanup Campaigns on a regular basis and evaluate their effectiveness;
  - c) Implement Cleanup Campaigns on a regular basis driven by beach; concessionaries/ managers/ local authorities, including outside the touristic season;
  - d) Participate in International Coastal Cleanup Campaigns and Programmes;<sup>18</sup>
  - e) Apply as appropriate ‘Adopt-a-Beach’ or similar practices and enhance public participation role with regard to marine litter management;
  - f) Apply Fishing for Litter in an environmentally sound manner, based on agreed guidelines and best practice, in consultation with the competent international and regional organizations and in partnership with fishermen and ensure adequate collection, sorting, recycling and/or environmentally sound disposal of the fished litter;
  - g) Charge reasonable costs for the use of port reception facilities or, when applicable apply No-Special-Fee system, in consultation with competent international and regional organizations, when using port reception facilities for implementing the measures provided for in Article 10.
- 17 The Contracting Parties shall explore and implement to the extent possible by the year 2017 the “Fishing for Litter” environmentally sound practices to facilitate clean-up of the floating litter and the seabed from marine litter caught incidentally and/or generated by fishing vessels in their regular activities including derelict fishing gear.
- 18 The Contracting Parties shall explore and implement to the extent possible by the year 2025, targeted activities for the localization and retrieval, and where possible, reuse or recycling of derelict fishing gear including through new environmentally sustainable technologies.

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<sup>18</sup> Request to provide examples for reference campaigns to be provided to the MED POL FP meeting

### ***Part III – Assessment***

#### **ARTICLE 11**

##### **Assessment of Marine Litter in the Mediterranean**

- 19 The Contracting Parties shall assess in the framework of ecosystem approach the state of marine litter, the impact of marine litter on the marine and coastal environment and human health, as well as the socio-economic aspects of marine litter management based on coordinated and, if possible, common agreed methodologies, national monitoring programmes and surveys.
- 20 The Secretariat shall prepare the assessment of marine litter in the Mediterranean every six years using results of the national monitoring programmes and applied measures with the view to address priority issues and major information and data gaps, using all other available relevant regional and international data and where appropriate responses by the Contracting Parties to specific marine litter related questionnaires prepared by the Secretariat.
- 21 The first Assessment of the state of marine litter in the Mediterranean based on the existing information shall be submitted to the meeting of the Contracting Parties two years after entry into force of the Regional Plan.

#### **ARTICLE 12**

##### **Mediterranean Marine Litter Monitoring Programme**

- 22 Based on ecosystem approach ecological objectives and integrated monitoring programme, and in synergy with the relevant international and regional guidelines and documents, the Contracting Parties, on the basis of the proposals of the Secretariat, shall:
  - a) Prepare the Regional Marine Litter Monitoring Programme, as part of the Integrated Monitoring and Assessment Programme (IMAP);
  - b) Establish in the year 2016 the Regional Data Base on Marine Litter which should be compatible with other regional or overarching databases;
  - c) Establish by the year 2014 Expert Group on Regional Marine Litter Monitoring Programme, in the framework of the implementation of the Ecosystem Approach.
- 23 For the purpose of this Regional Plan and in compliance with the monitoring obligations under Article 12 of the Barcelona Convention and Article 8 of the LBS Protocol, the Contracting Parties shall design by the year 2017 National Monitoring Programme on Marine Litter.
- 24 The National Monitoring Programmes should address:
  - a) The need for harmonization and consistency with the integrated regional monitoring programme based on ecosystem approach and consistency with other regional seas;
  - b) Aspects related to monitoring litter originating from riverine inputs;
  - c) The need for litter monitoring in high sensitivity areas (endangered species, key habitats, etc.), and in Specially Protected Areas in the Mediterranean (SPAMIs).
- 25 To this aim, the Secretariat shall prepare, in collaboration with the relevant regional organizations, by the year 2014 the Guidelines for the preparation of the National Marine Litter Monitoring Programmes.



## ***Part IV – Support to Implementation***

### **ARTICLE 13**

#### **Research Topics and Scientific Cooperation**

- 26 The Contracting Parties agree to cooperate, with support from the Secretariat, with competent international and regional organizations and relevant scientific institutions, on marine litter issues that due to their complexity require further research.

### **ARTICLE 14**

#### **Specific Guidelines**

- 27 The Secretariat in cooperation with relevant international and regional organizations, shall prepare specific guidelines, taking into account where appropriate existing guidelines, to support and facilitate the implementation of measures provided for in articles 9 and 10 of the Regional Plan. Subject to availability of external funds such guidelines shall be published in different Mediterranean region languages.

### **ARTICLE 15**

#### **Technical Assistance**

- 28 For the purpose of facilitating the implementation of the measures and monitoring obligations as provided for in Articles 7 to 10 and 12 of the Regional Plan, technical assistance, transfer of knowhow and technology shall be provided, including capacity building, by the Secretariat to the Contracting Parties in need of assistance.

### **ARTICLE 16**

#### **Enhancement of Public Awareness and Education**

- 29 Due to the nature of the marine litter management issue, enhancement of public awareness and education, [[and co-responsibility of all stakeholders](#)] are very important components of the marine litter management.
- 30 To this aim the Contracting Parties shall undertake to the extent possible, where appropriate, in synergy with existing initiatives in the field of education for sustainable development and environment, and in partnership with civil society, public awareness and education activities, with adequate duration and follow up, with regard to marine litter management including activities related to prevention and promotion of sustainable consumption and production.

### **ARTICLE 17**

#### **Major groups and Stakeholder Participation**

- 31 For the effective implementation of the Regional Plan, the Contracting Parties shall encourage appropriate involvement of, and partnerships with, various stakeholders including local

authorities, civil society, private sector (producers, garbage collection and treatment companies, etc.) and other stakeholders as appropriate:

- a) Regional, National and local authorities;
- b) Maritime sector;
- c) Tourism sector;
- d) Fisheries and Aquaculture;
- e) Agriculture;
- f) Industry; and
- g) Civil society.

## **ARTICLE 18**

### **Regional and International Cooperation**

- 32 For the purpose of facilitating the implementation of the Regional Plan the Secretariat shall establish institutional cooperation with various relevant regional and global institutions and initiatives.
- 33 The Contracting Parties shall cooperate directly or with the assistance of the Secretariat or the competent international and regional organizations to address transboundary marine litter cases.

## **ARTICLE 19**

### **Reporting**

- 34 In conformity with Article 26 of the Barcelona Convention and Article 13, paragraph 2(d), of the LBS Protocol the Contracting Parties shall report on a biennial basis on the implementation of this Regional Plan, in particular the implementation of the above measures, their effectiveness and difficulties encountered and data resulting from monitoring programme as provided for in Article 12 of this Regional Plan.
- 35 The Contracting Parties shall review biennially the status of implementation of the Regional Plan upon its entry into force, on the basis of the regional report prepared by the Secretariat.

## ***Part V – Final Provisions***

## **ARTICLE 20**

### **Implementation Timetable**

- 36 The Contracting Parties shall implement this Regional Plan, in particular the above measures according to the timetables indicated in the respective Articles of the Regional Plan.

**ARTICLE 21**  
**Entry into Force**

- 37 The present Regional Plan shall enter into force and become binding on the 180<sup>th</sup> day following the day of notification by the Secretariat in accordance with Article 15, paragraphs 3 and 4, of the LBS Protocol.

**ARTICLE 22**  
**Enforcement of Measures**

- 38 The Contracting Parties shall take the necessary actions to enforce the measures in accordance with their national regulations.

[ANNEX I

List of Single Use Plastic (SUP) Items <sup>19</sup>  
Option 1

*Mediterranean Top-10 and the Mediterranean Top-X (80%) for beach marine litter items*

	UNEP Code	Item name	SUP	Macro-Category
MED Top-10 Marine Litter Items	G76	Plastic/polystyrene pieces 2.5 cm > < 50 cm	No	Plastic/Polystyrene
	G27	Cigarette butts and filters	Yes	Plastic/Polystyrene
	G21/G24	Plastic caps and lids (including rings from bottle caps/lids)	Yes	Plastic/Polystyrene
	G95	Cotton bud sticks	Yes	Sanitary Waste
	G7/G8	Drink bottles	Yes	Plastic/Polystyrene
	G30/G31	Crisps packets/sweets wrappers/Lolly sticks	Yes	Plastic/Polystyrene
	G124	Other plastic/polystyrene items (identifiable) including fragments	No	Plastic/Polystyrene
	G50	String and cord (diameter less than 1 cm)	No	Plastic/Polystyrene
	G208a	Glass fragments >2.5cm	No	Glass
	G200	Bottles (including identifiable fragments)	No	Glass
MED Top-X (80%) Marine Litter Items	G73	Foam sponge items (i.e. matrices, sponge, etc.)	No	Plastic/Polystyrene
	G34/G35	Cutlery, plates and trays / Straws and stirrers	Yes	Plastic/Polystyrene
	G3	Shopping bags incl. pieces	Yes	Plastic/Polystyrene
	G10	Food containers incl. fast food containers	Yes	Plastic/Polystyrene
	G33	Cups and cup lids	Yes	Plastic/Polystyrene
	G204	Construction material (brick, cement, pipes)	No	Ceramics
	G152	Cigarette packets	No	Paper/Cardboard
	G67	Sheets, industrial packaging, plastic sheeting excluding agriculture and greenhouse sheeting	No	Plastic/Polystyrene
	G4	Small plastic bags, e.g. freezer bags incl. pieces	Yes	Plastic/Polystyrene
	G175	Cans (beverage)	No	Metal
	G54	Nets and pieces of net > 50 cm	No	Plastic/Polystyrene
	G158	Other paper items (including non-recognizable fragments)	No	Paper/Cardboard
	G145	Other textiles (including pieces of cloths, rags, etc.)	No	Cloth

Source:

*Official monitoring data retrieved from the Contracting Parties to the Barcelona Convention for the purpose of proposing updated baseline and threshold values for IMAP Ecological Objective 10 (Marine Litter) Common Indicator 22 (beach macro-litter) including the relative and cumulative frequency for the full UNEP/MAP list for beach marine litter items.*

Table (1) demonstrates a high occurrence of SUPs in the composition of beach litter; nearly half of total items.

<sup>19</sup> MED POL Focal Points Meeting to select the from the three options included in this annex. If option 3 is selected, UNEP codes shall be inserted.

Using beach litter information as a reasonable proxy to identify SUPs to be tackled in priority, the following Top-10 SUPs beach litter items is depicted:

**Option 2**

***Mediterranean Top-10 SUPs found as beach litter items***

Ranking	Mediterranean region
1	Cigarette butts and filters
2	Plastic caps and lids (including rings from bottle caps/lids)
3	Cotton bud sticks
4	Drink bottles
5	Crisps packets/sweets wrappers/Lolly sticks
6	Cutlery, plates and trays / Straws and stirrers
7	Shopping bags incl. pieces
8	Food containers incl. fast food containers
9	Cups and cup lids
10	Small plastic bags, e.g. freezer bags incl. pieces

**Option 3**

***Mediterranean priority list of SUPs per group of items***

Group of items	Items
Packaging	Bags
Smoking-related	Cigarette filters
Food and beverage packaging	Drink bottles, caps and lids
	Crisp packets and sweet wrappers
On-the-go food and beverage packaging	Cutlery, plates and trays
	Straws and stirrers
	Drinks cups and cup lids
	Food containers including fast food packaging
WC flushed items	Sanitary applications, including cotton buds, wet wipes and sanitary towels
Personal protective equipment	Masks and gloves

]

## [Annex II

### List of Chemical Additives of Concern Used in Plastic Production

**List of persistent organic pollutants (POPs) used as additives in plastics and listed in Part A (elimination) and Part B (restriction) to the Stockholm Convention as of 2021<sup>20</sup>:**

#### Part A:

- [Decabromodiphenyl ether \(commercial mixture, c-decaBDE\)](#)
- Hexabromobiphenyl
- Hexabromocyclododecane (HBCDD)
- Hexabromodiphenyl ether and heptabromodiphenyl ether (commercial octabromodiphenyl ether)
- Tetrabromodiphenyl ether and pentabromodiphenyl ether (commercial pentabromodiphenyl ether)
- Short-chained chlorinated paraffins (SCCPs)
- Perfluorooctanoic acid (PFOA), its salts and PFOA-related compounds
- Polychlorinated biphenyls (PCB)
- Polychlorinated naphthalenes

#### Part B:

- Perfluorooctane sulfonic acid (PFOS), its salts and perfluorooctane sulfonyl fluoride (PFOSF)

**List of additives used in plastics and identified as substance of concern in the information document of the 2019 Meetings of the conferences of the Parties to the Basel, Rotterdam and Stockholm conventions (UNEP/POPS/COP.9/INF/28/Add.1 - Plastic and toxic additives, and the circular economy: the role of the Basel and Stockholm Conventions) and main sectors concerned:**

#### 1. Substances of concern:

- **Flame-retardants:** polybrominated diphenyl ethers (PBDEs) including commercial pentabromodiphenyl ether (tetraBDE and pentaBDE), commercial octabromodiphenyl ether (hexaBDE and heptaBDE), decabromodiphenyl ether (decaBDE); decabromodiphenylethane (DBDPE); tetrabromobisphenol A (TBBPA); phosphorous flame retardants (e.g. tris(2-chloroethyl)phosphate (TCEP) and tris(2-chlorisopropyl) phosphate (TCPP); short-, medium- and long- chain chlorinated paraffins (SCCPs, MCCPs, LCCPs); boric acid; hexabromocyclododecane (HBCDD); Dechloranes in all its forms (e.g. Dechlorane 602, Dechlorane 603, Dechlorane 604 and Dechlorane Plus); hexabromobiphenyl (HBB); 1,2-bis(2,4,6-tribromophenoxy) ethane (BTBPE); hexabromobenzene (HBBz).
- **Perfluorinated chemicals:** perfluorooctane sulfonic acid (PFOS), its salts and perfluorooctane sulfonyl fluoride (PFOSF), perfluorohexane sulfonic acid (PFHxS), its salts and PFHxS-related compounds, perfluorooctanoic acid (PFOA), its salts and PFOA-related compounds.
- **Phthalates:** phthalic acid esters (phthalates); di(2-ethylhexyl) phthalate (DEHP); diisononyl phthalate (DiNP); diisodecyl phthalate (DiDP); di(2-Propyl Heptyl) phthalate (DPHP).
- **Bisphenols:** bisphenol A; 4-tertiary-octylphenol; bisphenol B; bisphenol F; and bisphenol S.
- **Nonylphenols:** nonylphenols (NP); nonylphenol ethoxylates (NPE).

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<sup>20</sup> As of 2021 - New additives are under revision by the POPs Review Committee, for inclusion under the Stockholm Convention: Dechlorane Plus (flame retardant) and UV-328 (antioxidant)

2. Polymers and their additives are extensively used in the following categories of consumer products:

- Children's products;
- Packaging: food and beverage contact materials;
- Electrical and electronic equipment (EEE) and related waste (WEEE/E-waste);
- Textile, upholstery and furniture; and
- Construction sector.]