



UNITED
NATIONS

EP

UNEP/MED WG.509/4



UNITED NATIONS
ENVIRONMENT PROGRAMME
MEDITERRANEAN ACTION PLAN

07 May 2021
Original: English

Meeting of the MED POL Focal Points

Videoconference, 27-28 May 2021 and 06 – 07 October 2021

Agenda Item 5: Review of proposed updates of the Annexes

Proposals for Updating the Annexes to the LBS Protocol

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UNEP/MAP
Athens, 2021

Note by the Secretariat

The 21st 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 called for updating of the Annexes to the Land Based Sources and Activities (LBS Protocol) and Dumping Protocol of the Barcelona Convention.

This Decision requested the establishment of a Working Group (herein after referred to as WG) composed of experts designated by the Contracting Parties to review the annexes and to make proposals for consideration of MED POL Focal Points meeting and the 22nd Meeting of the Contracting Parties (COP-22) in December 2021.

The WG met on 10 December 2020. It reviewed the proposed amendments to the Annexes of the LBS Protocol prepared by MED POL. The WG requested the Secretariat to provide several clarifications on several issues for which additional updates were proposed.

The present document is a more elaborated version of document UNEP/MED WG.485/3 (Proposals for Updating the Annexes to the LBS Protocol) agreed by the first WG Meeting, in December 2020. The Secretariat (CU, MED POL and SCP/RAC) undertook an in-depth analysis to ensure consistency throughout the changes introduced during and after the WG Meeting with the view to avoiding to the extent possible any redundancies. To this aim the Secretariat introduced minor editorial changes and introduced some restructuring to the text, where needed.

From the substantive point of view the updated Annexes to the LBS Protocol bring new elements from the ecosystem approach perspective, a better alignment with relevant global MEA and consideration of emerging issues. A number of new elements compared to the text reviewed and agreed by the WG Meeting are provided in Annex IV. They include additions on the subjects of circular economy approaches in production processes taking into account the scope of the application of the LBS Protocol; as well as further elaborations of BAT and BEP definitions.

The Secretariat team examined the SCP/RAC proposal, also considered expanding the definitions of BAT and BEP by referring to broader scope and elements of circular economy, including sustainable consumption and production. However a cautious approach was followed and therefore recommended when discussing the extent to which the definitions of BAT and BEP can be specific-circular economy oriented, considering also that similar MEAs such as Minamata Convention or the Stockholm Convention have defined the notions of BAT and BEP at general level, thus providing a wide margin of discretion to competent authorities when determining what can actually be regarded as BAT and BEP. Moreover, definitions of BAT and BEP must be within the scope of application of the LBS Protocol.

The proposed updated Annexes to the LBS Protocol are presented herein to the Meeting of MED POL Focal Points for their consideration and approval and their transmission to the Meeting of the MAP Focal Points to be held in September 2021. For easy reference the agreed text of the updates to the Annexes accepted in December 2020 by the WG is shown in **green typeset** (versus original text). Changes introduced after the meeting are placed inside brackets with a **[blue typeset]**. A number of footnotes are included in the document only for explanatory purposes to facilitate the understanding of the proposed changes and they will be removed after the meeting.

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List of Abbreviations / Acronyms

BAT	Best Available Techniques
BEP	Best Environmental Practice
BOD	biochemical oxygen demand
COD	chemical oxygen demand
COP	Conference of the Parties
DDT	Dichloro-diphenyl-trichloroethane
EU	European Union
EUROSTAT	Statistical Office of the European Union
GES	Good Environmental Status
E-PRTR	European Pollutant Release and Transfer Register
HBCD	hexabromocyclododecane
LBS Protocol	Protocol for the Protection of the Mediterranean Sea against Pollution from Land-Based Sources and Activities
MAP	Mediterranean Action Plan
MED POL	Programme for the Assessment and Control of Marine Pollution in the Mediterranean
EU MSFD	Marine Strategy Framework Directive of the European Union
NACE	Nomenclature statistique des activités économiques dans la Communauté
PCBs	Polychlorobiphenyls
PCDD	Polychlorinated dibenzodioxins
PCDF	Polychlorinated dibenzofurans
POP	Persistent Organic Pollutants
RSC	Regional Seas Conventions
SDG	Sustainable Development Goal
TOC	Total Organic Carbon
UNDESA	United Nations Department of Economic and Social Affairs
UNEP	United Nations Environment Programme
UNSTAT	United Nations Statistic Division

LAND-BASED SOURCES (LBS) PROTOCOL

ANNEX I

ELEMENTS TO BE TAKEN INTO ACCOUNT IN THE PREPARATION OF ACTION PLANS, PROGRAMMES AND MEASURES FOR THE ELIMINATION OF POLLUTION FROM LAND-BASED SOURCES AND ACTIVITIES

This annex contains elements which will be taken into account in the preparation of action plans, programmes and measures for the elimination of pollution from land-based sources and activities referred to in articles 5, 7 and 15 of this Protocol.

Such action plans, programmes and measures will aim to cover the sectors of activity listed in section A and also cover the groups of substances enumerated in section C, selected on the basis of the characteristics listed in section B of the present annex.

Priorities for action should be established by the Parties, on the basis of the relative importance of their impact on public health, the environment and socio-economic and cultural conditions. Such programmes should cover point sources, diffuse sources and atmospheric deposition. In preparing action plans, programmes and measures, the Parties, in conformity with the Global Programme of Action for the Protection of the Marine Environment from Land-based Activities, adopted in Washington, D.C. in 1995, will give priority to substances that are toxic, persistent and liable to bioaccumulate, in particular to persistent organic pollutants (POPs), as well as to wastewater treatment and management.

A. SECTORS OF ACTIVITY

The following sectors of activity (not listed in order of priority) will be primarily considered when setting priorities for the preparation of action plans, programmes and measures for the elimination of the pollution from land-based sources and activities:

1. Energy production;
2. Fertilizer production;
3. Production and formulation of biocides;
4. The pharmaceutical industry;
5. Petroleum refining;
6. The paper, paper-pulp and wood production and processing industry;
7. Cement production;
8. The tanning and dressing industry including leather dyeing and finishing;
9. The metal industry including thermal processes in the metallurgical industry;
10. Mining and quarrying;
11. The shipbuilding and repairing industry;
12. Harbour operations;
13. The textile industry including textile pre-treatment, dyeing and finishing;
14. The electronic industry;
15. The recycling industry;
16. Other sectors of the organic chemical industry;
17. Other sectors of the inorganic chemical industry;
18. Tourism and leisure activities and infrastructure, including cruise shipping;

19. Agriculture;
20. Animal husbandry including animal slaughterhouses and animal by-products industries;
21. Food processing;
22. Aquaculture and fishing;
23. Treatment and disposal of hazardous wastes;
24. Treatment and disposal of urban wastewater;
25. Management, including treatment and disposal, of urban solid waste;
26. Disposal of sewage sludge;
27. The waste management industry;
28. Incineration of waste and management of its residues;
29. Works which cause physical alteration of the natural state of the coastline including physical restructuring of rivers, coastline or seabed (water management);
30. Transport;
31. Construction;
32. Water collection and supply including desalination of seawater.
33. Mixed industrial zones including at least one of the above sectors.

B. CHARACTERISTICS OF SUBSTANCES IN THE ENVIRONMENT

For the preparation of action plans, programmes and measures, the Parties should take into account the characteristics listed below:

1. Persistence;
2. Toxicity or other noxious properties (e.g. carcinogenicity, mutagenicity, teratogenicity);
3. Bioaccumulation;
4. Radioactivity;
5. The ratio between observed concentrations and no observed effect concentrations (NOEC);
6. The risk of eutrophication of anthropogenic origin;
7. Health effects and risks;
8. Transboundary significance;
9. The risk of undesirable changes in the marine ecosystem and irreversibility or durability of effects, in particular:
 - a) adverse impacts on species composition and spatial and temporal variation per species/population, including distribution, abundance, and/or biomass, fecundity, survival and mortality/injury rates and behavior
 - b) adverse impacts on habitats characteristics;
10. Interference with the sustainable exploitation of living resources or with other legitimate uses of the sea;
11. Effects on the taste and/or smell of marine products for human consumption;
12. Effects on the smell, colour, transparency or other characteristics of seawater;
13. Distribution pattern (i.e. quantities involved, use patterns and probability of reaching the marine environment);
14. Potential for long-range environmental transport.

C. CATEGORIES OF SUBSTANCES ¹

The following categories of substances and sources of pollution will serve as guidance in the preparation of action plans, programmes and measures:

¹ A proposal was made to recommend pharmaceutical compounds (and CEC and ECP). Secretariat will include as a reference to inform MED POL FP meeting for their consideration

1. Organohalogen compounds and substances which may form such compounds in the marine environment. Priority will be given to Aldrin, Chlordane, DDT, Dieldrin, Dioxins and Furans, Endrin, Heptachlor, Hexachlorobenzene, Mirex, PCBs, Toxaphene; Polychlorinated Biphenyls (PCBs), Polychlorinated dibenzodioxins (PCDDs), Polychlorinated dibenzofurans (PCDFs), endosulfan and its related isomers, hexachlorocyclohexane, Diethylhexylphthalate (DEHP), Chlordecone, Hexabromobiphenyl, Hexabromodiphenyl ether and heptabromodiphenyl ether, Lindane, Pentachlorobenzene, Tetrabromodiphenyl ether and pentabromodiphenyl ether, Perfluorooctane sulfonic acid and its salts, and perfluorooctane sulfonyl fluoride, hexabromocyclododecane (HBCD), hexachlorobutadiene, pentachlorophenol and its salts and esters, and polychlorinated naphthalenes;
2. Total suspended particulates, total Volatile Organic Compounds (VOC), Nitrogen oxides, NH₃, sulfur oxide;
3. Organophosphorus compounds and silicon substances which may form such compounds in the marine environment;
4. Organotin compounds and substances which may form such compounds in the marine environment;
5. Polycyclic aromatic hydrocarbons;
6. Heavy metals and their compounds. Priority given to chromium, cadmium, lead, mercury, nickel, organic tin compounds, organic mercury compounds and organic lead compounds;
7. Used lubricating oils;
8. Radioactive substances, including their wastes, when their discharges do not comply with the principles of radiation protection as defined by the competent international organizations, taking into account the protection of the marine environment;
9. Biocides and their derivatives;
10. Pathogenic microorganisms;
11. Crude oils and hydrocarbons of petroleum origin;
12. Cyanides and fluorides;
13. Non-biodegradable detergents and other nonbiodegradable surface-active substances;
14. Compounds of nitrogen and phosphorus and other substances which may cause eutrophication, including biodegradable substances expressed as Biological Oxygen Demand (BOD) or Chemical Oxygen Demand (COD) or Total Organic Carbon (TOC), Total Nitrogen and Total Phosphorus;
15. Litter (any persistent manufactured or processed solid material which is discarded, disposed of, or abandoned in the marine and coastal environment) including plastics, microplastic and micro-sized litter;
16. Thermal discharges and input of other forms of energy;
17. Acid or alkaline compounds which may impair the quality of water;
18. Non-toxic substances that have an adverse effect on the oxygen content of the marine environment;
19. Non-toxic substances that may interfere with any legitimate use of the sea;
20. Non-toxic substances that may have adverse effects on the physical or chemical characteristics of seawater.
21. Brine;
22. Phenolic compounds, brominated flame retardants, polycyclic aromatic hydrocarbons and short chain chlorinated paraffins;
23. Chemicals used for the preservation and/or treatment of wood, timber, wood pulp, cellulose, paper, hides and textiles.

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ANNEX II

ELEMENTS TO BE TAKEN INTO ACCOUNT IN THE ISSUE OF THE AUTHORIZATIONS FOR DISCHARGES OF WASTES

With a view to the issue of an authorization for the discharges of wastes containing substances referred to in article 6 to this Protocol, particular account will be taken, as the case may be, of the following factors:

A. CHARACTERISTICS AND COMPOSITION OF THE DISCHARGES

1. Type and size of point or diffuse source (e.g. industrial process).
2. Type of discharges (e.g. origin, average composition).
3. State of waste (e.g. solid, liquid, sludge, slurry).
4. Total amount (volume discharged, e.g. per year).
5. Discharge pattern (continuous, intermittent, seasonally variable, etc.).
6. Concentrations with respect to relevant constituents of substances listed in annex I and of other substances as appropriate.
7. Physical, chemical and biochemical properties of the waste discharges.

B. CHARACTERISTICS OF DISCHARGE CONSTITUENTS WITH RESPECT TO THEIR HARMFULNESS

1. Persistence (physical, chemical, biological) in the marine environment.
2. Toxicity and other harmful effects.
3. Accumulation in biological materials or sediments.
4. Biochemical transformation producing harmful compounds.
5. Adverse effects on the oxygen content and balance.
6. Susceptibility to physical, chemical and biochemical changes and interaction in the aquatic environment with other sea-water constituents which may produce harmful biological or other effects on any of the uses listed in section E below.
7. All other characteristics as listed in annex I, section B.

C. CHARACTERISTICS OF DISCHARGE SITE AND RECEIVING ENVIRONMENT

1. Hydrographic, meteorological, geological and topographical characteristics of the coastal area.
2. Location and type of the discharge (outfall, canal outlet, etc.) and its relation to other areas (such as amenity areas, spawning, nursery, and fishing areas, shellfish grounds) and other discharges.
3. Initial dilution achieved at the point of discharge into the receiving environment.
4. Dispersion characteristics such as effects of currents, tides and wind on horizontal transport and vertical mixing.
5. Receiving water characteristics with respect to physical, chemical, biological and ecological conditions in the discharge area, **as well as the ecosystem functions and processes, in particular temperature, hydrology, bathymetry, turbidity, transparency, sound, salinity, nutrients, organic carbon, chlorophyll, dissolved gases, acidity (pH), links between species of marine birds, mammals, reptiles, fish and cephalopods and habitats, pelagic-benthic community shifts and productivity.**
6. Capacity of the receiving marine environment to receive waste discharges without undesirable effects.

D. AVAILABILITY OF WASTE TECHNOLOGIES

The methods of waste reduction and discharge for industrial effluents as well as domestic sewage should be selected taking into account the availability and feasibility of:

- (a) Alternative treatment processes;
- (b) Re-use or elimination methods;
- (c) On-land disposal alternatives;
- (d) Appropriate low-waste technologies.

E. POTENTIAL IMPAIRMENT OF MARINE ECOSYSTEMS AND SEA-WATER USES

1. Effects on human health through pollution impact on:

- (a) Edible marine organisms **extraction and cultivation of living resources**;
- (b) Bathing waters;
- (c) Aesthetics **including color and odor**;

2. Effects on marine ecosystems **including food webs**, in particular living resources, endangered species and critical habitats **[including from:**

- (a) Noise
- (b) Artificial light
- (c) Acidification
- (d) Hydrographic changes]

3. **Physical restructuring of rivers, coastline or seabed**

4. Effects on other legitimate uses of the sea.

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ANNEX III

CONDITIONS OF APPLICATION TO POLLUTION TRANSPORTED THROUGH THE ATMOSPHERE

This annex defines the conditions of application of this Protocol to pollution from land-based sources transported by the atmosphere in terms of Article 4.1(b) are the following:

- 1.** This Protocol shall apply to polluting discharges into the atmosphere under the following conditions:
 - (a) the discharged substance is or could be transported to the Mediterranean Sea Area under prevailing meteorological conditions;
 - (b) the input of the substance into the Mediterranean Sea Area is hazardous for the environment in relation to the quantities of the same substance reaching the Area by other means.
- 2.** This Protocol shall also apply to polluting discharges into the atmosphere affecting the Mediterranean Sea Area from land-based sources within the territories of the Parties and from fixed manmade offshore structures, subject to the provisions of article 4.2 of this Protocol.
- 3.** In the case of pollution of the Mediterranean Sea Area from land-based sources through the atmosphere, the provisions of articles 5 and 6 of this Protocol shall apply progressively to appropriate substances and sources listed in annex I to this Protocol as will be agreed by the Parties.
- 4.** Subject to the conditions specified in paragraph 1 of this annex, the provisions of Article 7.1 of this Protocol shall also apply to:
 - (a) discharges - quantity and rate - of substances emitted to the atmosphere, on the basis of the information available to the Contracting Parties concerning the location and distribution of air pollution sources;
 - (b) the content of hazardous substances in fuel and raw materials;
 - (c) the efficiency of air pollution control technologies and more efficient manufacturing and fuel burning processes;
 - (d) the application of hazardous substances in agriculture and forestry.
- 5.** The provisions of annex II to this Protocol shall apply to pollution through the atmosphere whenever appropriate. Air pollution monitoring and modelling using acceptable common emission factors and methodologies shall be carried out in the assessment of atmospheric deposition of substances, as well as in the compilation of inventories of quantities and rates of pollutant emissions into the atmosphere from land-based sources.
- 6.** All Articles, including parts thereof to this Protocol not mentioned in paragraphs 1 to 5 above shall apply equally to pollution from land-based sources transported by the atmosphere wherever applicable and subject to the conditions specified in paragraph 1 of this Annex.

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ANNEX IV

CRITERIA FOR THE DEFINITION OF BEST AVAILABLE TECHNIQUES AND BEST ENVIRONMENTAL PRACTICE

A. BEST AVAILABLE TECHNIQUES

1. The use of the best available techniques shall emphasize the use of zero-waste technology if available [and ensure the use of techniques aiming at preventing or minimizing the environmental impacts along all stages of life cycle of products and keeping as long as possible the value of products, materials and resources in the economy, minimizing the generation of waste.]
2. The term “best available techniques” means the latest stage of development (state of the art) of processes, of facilities or of methods of operation which indicate the practical suitability of a particular measure for [preventing and, where is not practicable, reducing] [~~limiting~~]² discharges, emissions and waste. In determining whether a set of processes, facilities and methods of operation constitute the best available techniques in general or individual cases, special consideration shall be given to:
 - (a) comparable processes, facilities or methods of operation which have recently been successfully tried out;
 - (b) technological advances and changes in scientific knowledge and understanding;
 - (c) the economic feasibility of such techniques;
 - (d) time limits for installation in both new and existing plants;
 - (e) the nature, effects and volume of the discharges and emissions concerned;
 - (h) the commissioning dates for new or existing installations;
 - (i) the consumption and nature of raw materials used in the process and its energy efficiency;
 - (j) the need to prevent or reduce the overall impact of the releases to the environment and the risks to it;
 - (k) the need to prevent accidents and to minimize their consequences for the environment;
 - (l) the need to ensure occupational health and safety at workplaces.
 - [(m) the need to use non-toxic substances in view of facilitating non-toxic waste streams to facilitate recovery and recycling]
 - [(p) the need to keep material and products in use as long as possible]
3. It therefore follows that what is “best available techniques” for a particular process will change with time in the light of technological advances, economic and social factors, as well as changes in scientific knowledge and understanding.
4. If the reduction of discharges and emissions resulting from the use of best available techniques does not lead to environmentally acceptable results, additional measures have to be applied.
5. “Techniques” include both the technology used and the way in which the installation is designed, built, maintained, operated and dismantled.

B. BEST ENVIRONMENTAL PRACTICE

6. The term “best environmental practice” means the application of the most appropriate combination of environmental control measures and strategies [to prevent and control pollution, to design out waste and pollution, to keep products and material in use and to regenerate natural

² The Secretariat recommends deletion

systems.] In making a selection for individual cases, at least the following graduated range of measures should be considered:

- (a) the provision of information and education to the public and to users about the environmental consequences of choice of particular activities and choice of products, their use and ultimate disposal;
- (b) the development and application of codes of good environmental practice, which cover all aspects of the activity in the product's life;
- (c) the mandatory application of labels informing users of environmental risks related to a product, its use and ultimate disposal;
- (d) saving resources, including energy;
- (e) making collection and disposal systems [as well as reuse centres] available to the public;
- (f) avoiding the use of hazardous substances or products and the generation of hazardous waste;
- (g) ~~[recycling, recovery and reuse]~~³ [establishing processes (i.e., industrial symbiosis) by which wastes, or by-products of an industry or industrial process become the raw materials for another]
- (h) the application of economic instruments to activities, products or groups of products;
- (i) establishing a system of licensing, involving a range of restrictions or a ban;
- [(j) the use of eco-labels to identify products proven to be environmentally sound;
- (k) establishing collaboration along the value chain in order to ensure that the origin and value of raw materials remain traceable when closing the loop;]

7. In determining what combination of measures constitute best environmental practice, in general or individual cases, particular consideration should be given to:

- (a) the environmental hazard of the product and its production, use and ultimate disposal;
- (b) the substitution by less polluting activities or substances;
- (c) the scale of use;
- (d) the potential environmental benefit or penalty of substitute materials or activities;
- (e) advances and changes in scientific knowledge and understanding;
- (f) time limits for implementation;
- (g) social and economic implications;
- [(h) the potential for keeping material and resources in use]

8. It therefore follows that best environmental practice for a particular source will change with time in the light of technological advances, economic and social factors, as well as changes in scientific knowledge and understanding.

9. If the reduction of inputs resulting from the use of best environmental practice does not lead to environmentally acceptable results, additional measures have to be applied and best environmental practice redefined.

C. GENERAL PREVENTION MEASURES RELATING TO BEST AVAILABLE TECHNIQUES AND BEST ENVIRONMENTAL PRACTICES

10. Priority should be given to the application of BAT and implementation of BEP to the sectors and categories of substances listed in Annex I.

³ Proposal by the Secretariat to be replaced with the subsequent proposed sentence.