



UNITED NATIONS ENVIRONMENT PROGRAMME

Intergovernmental Consultation Concerning
a Draft Protocol for the Protection of the
Mediterranean Sea Against Pollution from
Land-Based Sources

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PROPOSED TECHNICAL ANNEXES TO A
DRAFT PROTOCOL FOR THE PROTECTION OF THE MEDITERRANEAN SEA
AGAINST POLLUTION FROM LAND-BASED SOURCES

Prepared in cooperation with the
World Health Organization

Introduction

The draft technical annexes attached hereto relate directly to principles 4, 5 and 6 as set forth in document UNEP/IG.6/3. They are submitted to participants to this meeting for preliminary consideration. In drafting these annexes, account was taken of precedents found in other international agreements (see UNEP/IG.6/INF.3).

It is envisaged that the ongoing ECE/UNIDO/FAO/UNESCO/WHO/IAEA/UNEP joint project on pollutants from land-based sources in the Mediterranean will produce appropriate information on the nature of major land-based sources of pollution, on the type and quality of pollutants entering the Mediterranean Sea from these sources and through rivers, and on current practices in the region for waste discharge and water pollution control. This information will be available to assist representatives of the Mediterranean Coastal States in any future negotiations on the technical annexes for a regional protocol. The results of the joint project will be reported to participants at the Intergovernmental Meeting of Mediterranean Coastal States to be convened in Monaco in late November 1977.

ANNEX I

A. The following harmful substances and materials are listed for the purpose of principle 4 of the Protocol, which requires that their discharge into the Mediterranean Sea should be prohibited and effectively prevented:

1. Organohalogen compounds and compounds which may form such substances in the marine environment.¹
2. Organophosphorus, organotin and organosilicon compounds and compounds which may form such substances in the marine environment.¹
3. Crude oils and hydrocarbons derived from petroleum origin and mixtures containing any of these.¹
4. Mercury and mercury compounds.
5. Cadmium and cadmium compounds.
6. Persistent synthetic solids in suspended form which may materially interfere with fishing or navigation, reduce amenities or interfere with other legitimate uses of the sea and the coastal waters in particular.
7. High- and medium- and low-level radioactive wastes or other high- and medium- and low-level radioactive matter to be defined by the International Atomic Energy Agency.

B. This Annex applies to all wastes from land-based sources, including municipalities and industries, as well as any other point and non-point sources which are discharging into the sea.

C. This Annex does not apply to domestic sewage and agricultural wastewaters containing the substances referred to in section A as trace contaminants only. The discharge of such wastes shall be subject to the provisions of Annexes II and III as appropriate.

D. This Annex does not apply to wastes such as sewage sludge, municipal garbage or industrial waste materials which are carried by and dumped from ships. Such wastes are covered by the Protocol for the Prevention of Pollution of the Mediterranean Sea by Dumping from Ships and Aircraft.

¹ Excluding those compounds which are not likely to produce toxic effects at the concentration discharged or due to subsequent transformation or bio-accumulation in the marine environment, provided that they do not make edible marine organisms unpalatable.

A. The following waste substances and materials are listed for the purpose of principle 5 of the Protocol, which requires special care for them with the purpose of control and strict limitation of their discharge into the Mediterranean Sea:

1. The following elements and their compounds:

(a) Zinc

(b) Copper

(c) Nickel

(d) Chromium

(e) Lead

(f) Arsenic

(g) Selenium

(h) Antimony

(i) Vanadium

(j) Silver

2. Biocides and their derivatives not covered in Annex I.

3. Cyanides and fluorides.

4. Hydrocarbons and their derivatives not covered in Annex I.

5. Inorganic and synthetic organic chemicals, other than those referred to in Annex I, likely to produce harmful effects on marine organisms or to make edible marine organisms unpalatable; as well as chemicals which may lead to the formation of such substances in the marine environment.

6. Substances which, though not producing toxic effects, may become harmful because of the concentrations or quantities in which they are discharged, or which are liable to reduce amenities seriously or to endanger human life or marine organisms or to impair other legitimate uses of the sea and the coastal waters in particular.

7. Pathogenic micro-organisms which may become harmful because of the concentrations and quantities in which they are discharged or which are liable to endanger human life or marine organisms, or to impair other legitimate uses of the sea and the coastal waters in particular.

B. The control and strict limitation of the discharge of substances referred to in section A should be effected in accordance with the criteria set out in Annex III.

C. This Annex applies to all wastes from land-based sources, including municipalities and industries, as well as any other point and non-point sources which are discharging into the sea.

D. This Annex does not apply to domestic sewage and agricultural wastewaters containing the substances referred to in items 1 to 5 of section A as trace contaminants only. The discharge of such wastes shall be subject to the provisions of Annex III as appropriate.

E. This Annex does not apply to wastes such as sewage sludge, municipal garbage or industrial waste materials which are carried by and dumped from ships. Such wastes are covered by the Protocol for the Prevention of Pollution of the Mediterranean Sea by Dumping from Ships and Aircraft.

ANNEX III

According to principle 5 of the Protocol, the criteria for the control of waste discharges containing substances referred to in Annex II include the following considerations:

A. Characteristics and composition of the waste

A general characterization of wastes provides for their classification and assessment of potentially harmful properties:

1. Type of waste (origin, average composition).
2. Form of waste (solid, liquid, sludge, slurry).
3. Total amount (volume, e.g. per year).
4. Discharge pattern (continuous, intermittent, seasonal variations, etc.).
5. Concentrations with respect to major constituents, substances listed in Annex I, substances listed in Annex II, and other substances as appropriate.
6. Physical, chemical and biochemical properties of the waste.
7. Presence of pathogenic micro-organisms (bacteria, viruses).

B. Characteristics of potentially harmful waste constituents

The potential harmfulness of specific waste constituents requires individual evaluation in the light of actual concentrations and amounts discharged:

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 rendering harmful compounds.
5. 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 C below.

C. Potential impairment of sea-water uses

An assessment of the possible impact of waste discharges on the following uses of the sea and the coastal waters is required:

1. Effects on human health through pollution impact on:
 - (a) fish and shellfish;
 - (b) bathing waters;
 - (c) aesthetics.
2. Effects on living resources, in particular on:
 - (a) fisheries;
 - (b) fishing activities;
 - (c) aqua culture;
 - (d) others, including birds and mammals.

3. Effects on marine ecosystems.

D. Characteristics of discharge site and receiving water

The local conditions of the water into which the wastes are discharged require consideration with regard to the following:

1. Hydrographic, meteorological, geological and topographical conditions of the coastal area.
2. Location of the waste discharge (outfall, canal, outlet, etc.) and its location in relation to other areas (e.g. amenity areas, spawning, nursery and fishing areas, shellfish grounds).
3. Initial dilution achieved at the point of waste release.
4. Dispersion characteristics (e.g. effects of currents, tides and wind on horizontal transport and vertical mixing).
5. Water characteristics with respect to physical, chemical, biochemical, biological and ecological conditions in the discharge area.

E. Availability of waste treatment technology

The method of waste treatment and discharge should be selected with the following considerations taken into account:

1. Technical feasibility of outfall structures.
2. Applicability of alternatives for municipal sewage treatment and for combined treatment of industrial and domestic wastewaters.
3. Acceptable methods for disposal of waste treatment residuals on land.
4. Availability of specific treatment processes for hazardous industrial waste constituents or for their transformation into substances less harmful for discharge into the sea.
5. Availability of alternative methods for reuse or disposal of wastewaters on land.

ANNEX IV

A. The following types of installations are listed for the purpose of principle 6 of the Protocol, which requires that waste discharges from newly established installations shall undergo a minimum treatment as given in Annex V:

1. Hotels and other tourist accommodation.
2. Tourist compounds such as camping grounds, bungalow areas and similar installations.
3. Residential settlements consisting of more than ten population equivalents.
4. Service stations, commercial centres and other trade installations.
5. Industrial sites and individual factories of significant size and/or waste generation.
6. Hospitals and similar installations (sanatoriums, etc.).
7. Any other private or public installation rendering a new waste source or causing a significant change of present wastewater quantity or quality.

B. Three alternative methods are to be considered for the treatment and disposal of wastewaters from newly established installations:

1. Direct discharge into the sea through outfall, canal, or any other type of outlet. In this case, a minimum treatment complying with the requirements set forth in Annex V will be necessitated.
2. Connexion to an existing municipal sewerage system. In this case the adequacy of the existing treatment and disposal facilities needs to be verified. Otherwise the requirements set forth in Annex V will come into effect.
3. Reuse or disposal of the wastewater on land with no discharge to the sea. In this case the appropriate national regulations apply.

C. Newly established installations will also be evaluated and assessed in accordance with the technical guidelines set forth in Annexes I, II and III of this Protocol.