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## **MEDITERRANEAN ACTION PLAN**

Meeting of the MAP Focal Points

Athens, Greece, 10-12 September 2013

### **Issue Paper on Implementation of Pollution Reduction and Prevention Policies And Measures in Coherence with the Ecosystem Approach**





Barcelona (Spain), 18-21 June 2013

## ISSUE PAPER ON IMPLEMENTATION OF POLLUTION REDUCTION AND PREVENTION POLICIES AND MEASURES IN COHERENCE WITH THE ECOSYSTEM APPROACH



## TABLE OF CONTENTS

1.	INTRODUCTION .....	1
2.	EVOLUTION OF THE MED POL PROGRAMME .....	1
3.	IMPLEMENTATION OF THE ECOSYSTEM APPROACH BY UNEP/MAP .....	2
4.	EMERGING GLOBAL AND REGIONAL DEVELOPMENT OF MAP RELEVANT WITH REGARD TO POLLUTION ASSESSMENT, CONTROL AND PREVENTION.....	3
5.	ACHIEVEMENTS AND CHALLENGES OF THE SAP/NAP IMPLEMENTATION .....	5
6.	CHALLENGES TO RESPOND TO NEW CONTEXTS .....	9
7.	PROPOSED PRIORITY ISSUES FOR CONSIDERATION BY MED POL FOCAL POINTS .....	10
8.	ISSUES FOR DISCUSSION .....	12
	ANNEX I – EVOLUTION OF MED POL PROGRAMME .....	14
	ANNEX II – ECOLOGICAL AND OPERATIONAL OBJECTIVES 5, 9, 10, 11 AND THEIR INDICATORS	15
	ANNEX III – INFORMATION ON TECHNICAL GUIDELINES ASSESSMENT AND CAPACITY BUILDING OUTPUTS DELIVERED IN THE FRAMEWORK OF MED POL.....	17
	ANNEX IV – PROPOSED METHODOLOGY TO STREAMLINE ECAP IN THE NAP/SAP PROCESS UPDATE .....	19

## 1. INTRODUCTION

The aim of this paper is to induce discussion among MED POL Focal Points on the future orientation that the Programme should embrace in relation to pollution reduction and prevention policies and measures in the Mediterranean region. The importance of this discussion stems from the need to further enhance the measures implementing pollution related Protocols of the Barcelona convention in coherence with ecosystem approach and in synergy with EU MSFD.

For this purpose, this issue paper reviews the major achievements and outcomes of UNEP/MAP work with regards to pollution assessment and control (MED POL Programme); new challenges and emerging issues at global and regional levels including development of ecosystem approach within the MAP system and its outcomes; and proposes recommendations for consideration and discussion by the MED POL focal points at their meeting in June 2013. The outcome of such a discussion will serve as guidance for elaborating the new/revised four/six-year programme of work of MAP during the next biennium with regards to pollution control, reduction and prevention.

This issue paper has been elaborated by the Secretariat with support from a team of policy and technical experts Mr. Mohamad Kayyal and Ms. Susanna Casanovas who undertook a thorough review of NAP/SAP implementation presented in document UNEP/(DEPI) MED WG 397/6. The paper is formatted in six chapters:

- i. Progression of the mandates of the MED POL Programme from its inception to date.
- ii. Implementation of the ecosystem approach by UNEP/MAP;
- iii. Achievements and challenges in the implementation of the Strategic Action Programme and the National Action Plans;
- iv. Update of the current global and regional contexts in relation to pollution control and prevention;
- v. Challenges facing the MED POL Programme; and
- vi. Proposed and recommendations to respond to these challenges.

## 2. EVOLUTION OF THE MED POL PROGRAMME

In 1975, the Mediterranean Countries recognized the importance of protecting the Mediterranean Sea from pollution and adopted the Mediterranean Action Plan (MAP). Concurrently, a Programme for the Assessment and Control of Pollution (MED POL) was established as the first operational programme of MAP to contribute to the elimination of land-based pollution of the Mediterranean. The four-phase mandate of MED POL from the time of its inception in 1975 to date is presented in Annex I.

MED POL's mandate, which has evolved from emphasis on pollution monitoring and assessment to focus on measures for pollution reduction and control supported and guided by the findings of assessments of sources and trends of marine pollution through monitoring and other tools.<sup>1</sup> The deliverables of UNEP/MAP through the MED POL programme expanded over the years in scope and number with the view to better serve the needs of the Parties. These cover important outputs related to:

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<sup>1</sup> The MED POL – Phase IV Programme (2006-2013). 14<sup>th</sup> Ordinary Meeting of the Contracting Parties to the Convention for the Protection of the Marine Environment and the Coastal Region of the Mediterranean and its protocols. Portoroz (Slovenia), 8-11 November 2005: precautionary principles, polluters pay principle, the principle of common but differentiated responsibility, the principle of assistance, cooperation and partnership, and the ecosystem and participatory approaches.

- a) Provision of substantive support to developing regional law (4 Protocols);
- b) Provision of substantive support to developing regional policy on pollution control (SAP/MED) and several other regional policies presented in Annex II;
- c) Design of specific pollution control/reduction/prevention measures (6 Regional Plans);
- d) Implementation of capacity building to various stakeholders from public sector and monitoring and scientific institutions;
- e) Coordination of marine pollution monitoring in the Mediterranean;
- f) Provision of laboratory services and monitoring equipments;
- g) Regular assessments of marine pollution levels and sources; including sectoral assessments
- h) Elaboration and support for implementation of a considerable number of technical guidelines; and
- i) Support to Parties to undertake actions on the ground to reduce and eliminate pollution.

### 3. IMPLEMENTATION OF THE ECOSYSTEM APPROACH BY UNEP/MAP

The Contracting Parties to the Barcelona Convention, decided in their 15<sup>th</sup> meeting held in January 2008 in Almeria, Spain (Decision IG 17/6), that UNEP/MAP should gradually implement the ecosystem approach. Moreover, the UNEP/MAP - Barcelona Convention Five-Year Programme of Work adopted at the Contracting Parties' meeting in Marrakesh in 2009, considers the ecosystem approach as its overarching priority cutting across its six thematic areas.

The Contracting Countries further decided in their 15<sup>th</sup> meeting a roadmap for the ecosystem approach consisting of seven steps.<sup>2</sup> In the 17<sup>th</sup> Meeting (Decision IG 20/4), the Contracting Parties adopted, based on Article 18 of the Barcelona Convention, the Mediterranean Ecological Objectives associated with Operational Objectives and Indicators. Out of the 11 adopted ecological objectives, four are related to pollution. These are EO5 on eutrophication, EO9 on pollution, EO10 on marine litter and EO11 on noise. These objectives and related indicators are presented in Annex II.

Decision (IG 20/4) of the 17<sup>th</sup> COP meeting also requested from the Secretariat to:

- *prepare an integrated monitoring programme based on the agreed ecosystem approach indicators;*
- *work on the determination of Mediterranean Good Environmental Status (GES) and targets during the next biennium; and*
- *ensure that MAP/Barcelona Convention regional policies become coherent with the ecosystem approach progress and outcome.*

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<sup>2</sup> The roadmap comprises: 1) establishing the vision for an ecosystem approach throughout the Mediterranean; 2) elaborating three strategic goals to achieve this vision; 3) undertaking an initial assessment to determine priority issues, information availability as well as gaps that need to be filled; 4) deciding on ecological objectives; 5) determining operational objectives and associated indicators and identifying targets or thresholds for those indicators; 6) developing a monitoring strategy; and 7) elaborating specific management plans and actions that will ensure that ecological objectives and strategic goals are met. To date, step 1 or the vision and step 2 or the three strategic goals of the ECAP roadmap have been completed. Step 3 consisting of the Initial Integrated Assessment of the Mediterranean Sea was completed in 2012 and approved.<sup>2</sup> Steps 4 and 5 consisting of the development of Ecological Objectives, Operational Objectives, relative Indicators to be used, and the targets for the Good Environmental Status (GES) in the different water bodies are either in progress or have been approved.

Good Environmental Status (GES) and targets for three of the four aforementioned ecological objectives, namely EO5 on eutrophication, EO9 on pollution, and EO10 on marine litter are presently under elaboration. Concrete proposals will be submitted to COP 18 for consideration and approval.<sup>3</sup> The proposed targets for GES, which are presented in document UNEP/MAP 379/11, are designed as trends whereby baseline values and/or quantifiable GES target point values are suggested (based on data availability). Additional information in this regard is presented in document UNEP (DEPI) MED WG.379/Inf.8 Reports of the ECAP coordination group, Athens May 2012 and April 2013.

#### **4. EMERGING GLOBAL AND REGIONAL DEVELOPMENT OF MAP RELEVANT WITH REGARD TO POLLUTION ASSESSMENT, CONTROL AND PREVENTION**

This chapter is a brief effort to review the most recent advances of global development including the Regional Seas Programme and Action Plans, and to bring to the attention of MED POL focal points issues of relevance.

The international community has become increasingly concerned about many issues involving oceans and coastlines as evidenced in the **Rio+20** Outcome Document "The Future We Want". In this document, immediate actions are called for on issues several issues related to oceans including pollution and marine litter.

The **Manila Declaration of the Global Programme of Action** for the Protection of the Marine Environment from Land-based Activities (UNEP/GPA), which was adopted in 2012 at the Third Intergovernmental Review Meeting (IGR-3), reaffirmed the commitment to develop policies to reduce and control wastewater, marine litter, and pollution from fertilizers.

In the **Fifth International Marine Debris Conference** that took place from 20 to 25 March 2011 in Honolulu, conference participants refined and endorsed by acclamation the Honolulu Commitment, which outlines 12 actions to reduce marine debris. They also worked to revise the Honolulu Strategy, which sets forth a results-oriented framework of action with the overarching goal to reduce impacts of marine debris over the next 10 years.

The **Regional Seas Programme** has set strategic directions for 2013-2016 with the aim of strengthening and increasing their effectiveness and outreach through inter alia:

- *Endeavor to effectively apply an ecosystem approach in the management of the marine and coastal environment;*
- *Contribute to the implementation of the GPA Manila Declaration especially in the core partnership areas of wastewater management, nutrients and marine litter;*
- *Strengthen coordination and build necessary capacities at the regional and national levels to improve global knowledge and trends on the status of the marine environment, contributing to the World Oceans Assessment (Regular Process); and*
- *Strengthen collaboration mechanisms to address common regional objectives, partnerships and coordinated regional implementation of relevant Multilateral Environmental Agreements, global and regional initiatives by United Nations Agencies.*

The **UNEP Governing Council** in its last meeting urged the contracting parties of regional seas convention to utilize the conventions and action plans as platforms for the regional implementation of multilateral environmental agreements and global programmes and initiatives. It has to be noted that with regards to chemicals and waste, efforts are being made by UNEP at

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<sup>3</sup> UNEP(DEPI)/MED WG.372/4. Report of the Meeting of the Correspondence Group on Good Environmental Status (GES) and Targets – Pollution and Litter Cluster. Sarajevo (Bosnia and Herzegovina), 29-30 October 2012.



a global level to establish, through an existing institution, a special programme, funded by voluntary contributions, to support institutional strengthening at the national level for implementation of the Basel, Rotterdam and Stockholm Conventions, the future Minamata Convention and SAICM, noting that each respective governing body would have to determine the participation of its entity in the special programme. Such developments bring to a different level the need for establishing efficient cooperation and partnerships.

During the 11<sup>th</sup> COP meeting of the **Basel Convention**, which took place from 28 April to 10 May 2013, the technical expert group submitted the "Draft framework for the environmentally sound management of hazardous wastes and other wastes" as a follow-up to the Indonesian-Swiss country-led initiative to improve the effectiveness of the Basel Convention. The framework for **Environmentally Sound Management of Hazardous Wastes (ESM)** and other wastes was developed as a practical guide for all stakeholders participating in the management of such wastes. The framework:

- a) Establishes a common understanding of what ESM encompasses;
- b) Identifies tools to support and promote the implementation of ESM; and
- c) Identifies strategies to implement ESM.

It should be noted that all Contracting Parties to the Barcelona Convention are also Party to the Basel Convention. In spite of some differences between the Hazardous Waste Protocol of the Barcelona Convention and the Basel Convention, there is room to enhance synergies and maximize results. Therefore, there is a need for a careful follow-up of the Basel Convention developments in particular with regard to the implementation of Basel Convention strategic plan, Implementation of ESM framework for HW and combating HW illegal traffic.

In the fourth and fifth meetings of the **Stockholm Convention** on Persistent Organic Pollutants, held in 2009 and 2011, the Conference of the Parties adopted amendments to Annexes A, B and C to the Stockholm Convention and listed ten new persistent organic pollutants. Currently, other chemicals are under review: CP/RAC and MED POL have carefully followed up the Stockholm convention work by ensuring full alignment and even introduced stricter measures for adoption by the Parties through the two regional plans on POPs adopted in 2009 and 2012.

Under the "**London Dumping Protocol**" all dumping is prohibited, except for possibly acceptable wastes on the so-called "reverse list". The Protocol has been amended to address carbon sequestration and has put in place several tools to enhance implementation at the national level, reporting, and inter regional cooperation. The Mediterranean Dumping Protocol provides for stricter measures than the respective London Dumping global instrument. Since 2007 up to now, the London Dumping Protocol has updated recently a considerable number of guidelines and developed a guidance to facilitate the national implementation. In that respect, it should be noted that the most recent respective guidelines adopted in the framework of the Dumping Protocol of the Barcelona Convention date to 2003 and 2005.

In January 2013, governments agreed to open the process for adopting and signing a global, legally-binding treaty to prevent emissions and releases on mercury. The **Minamata Convention** on Mercury, which will be open for signature at the Diplomatic Conference to be held from 7 to 11 October 2013 in Japan, provides for:

- *Controlling and reducing across a range of products, processes and industries where mercury is used, released or emitted;*
- *Banning of production, export and import of certain mercury containing products by 2020;*
- *Installing the Best Available Technologies on new power plants and facilities with plans to be drawn up to bring emissions down from existing ones; and*

- *Developing implementation plans and periodic reporting on the measures taken and on their effectiveness and the possible challenges in meeting the objectives of the Convention.*

The aim of the **Convention on Long-range Transboundary Air Pollution** (in force since 1979) is to ensure that Parties shall endeavor to limit and, as far as possible, gradually reduce and prevent air pollution including long-range transboundary air pollution within the UNECE region. The Convention has been extended by eight protocols that address specific measures to be taken by the Parties to cut their emissions of air pollutants. Currently, the Convention's priority activities include review and possible revision of its most recent protocols, implementation of the Convention and its protocols across the entire UNECE region and sharing its knowledge and information with other regions of the world.

The Regional Seas Conventions in Europe (**Ospar, Helcom and Black sea**) are committed to implement the ecosystem approach. Within this framework, they have developed several thematic strategies out of which four address pollution priorities: Eutrophication, Hazardous substances, Offshore Oil and Gas Industry, and Radioactive substances.

## 5. ACHIEVEMENTS AND CHALLENGES OF THE SAP/NAP IMPLEMENTATION

To support implementation of the regional and national policies stipulated in the Barcelona Convention, and in particular the LBS Protocol, the Contracting Parties adopted in 1997 the Strategic Action Programme to address Pollution from Land-Based Activities (SAP-MED).<sup>4</sup>

Establishment of priorities for action are based on the reports on pollution "hot spots", "critical habitats" and "sensitive areas" (areas of concern), in addition to a transboundary diagnostic analysis of relative importance of sources of pollution and causes of transboundary 'waters' problems, leading to identification of potential preventive and remedial actions.<sup>5</sup>

The Strategic Action Plan (SAP) consists of 33 targets covering the sectors of urban environment (municipal sewage, solid waste and air pollution), industrial development and physical alterations and destruction of habitats. Substances targeted in the SAP include toxic, persistent and liable to bioaccumulate, heavy metals, organohalogens, radioactive substances, nutrients and suspended solids, and hazardous wastes. Targets and activities are of national or regional, and of legal, institutional or technical nature.

The Contracting Parties at their 12<sup>th</sup> meeting held in Monaco in 2001 decided to apply the 'flat rate' for all Mediterranean countries as their strategy for the implementation of the SAP-MED pollution targets. The approach included an internal flexibility measure for which each country would reduce by X% its aggregate releases of targeted pollutant per year with a baseline budget of emissions and releases for each targeted pollutant as reference. In order to apply this approach it was agreed that:

- a) Each party would set up its own national baseline budget of pollution releases (2003);
- b) The national baseline budget for a SAP targeted pollutant should be the sum of the individual releases; and
- c) Any Party may transfer internally release reduction target between different activities generating the same targeted pollutants according to the socio economic and environmental priorities prevailing in the country.

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<sup>4</sup> UNEP/MAP (1998). Strategic Action Programme to Address Pollution from Land-Based Activities. MAP Technical Reports Series No. 119.

<sup>5</sup> Transboundary Diagnostic Analysis for the Mediterranean Sea (TDA/GEF). UNEP/MAP, 2005.

The major SAP implementation achievements are:

**National action plans:** In 2003-2005, the Contracting Parties to the Barcelona Convention elaborated 21 National Action Plans (NAP).<sup>6</sup> Measures included legal, institutional and technical targets and investments to be accomplished by 2010 and 2015. The categories of targeted substances cover activities carried out within the urban environment or as part of activities related to industrial development. MED POL's Secretariat summarized the main actions that the Parties have committed as described in their National Action Plans,<sup>7</sup> and analyzed the NAPs by sector of activity or substance.<sup>8</sup> It was demonstrated that if NAPs are fully implemented, the midterm targets of the SAP will be achieved. The adopted NAPs presented a very significant investment portfolio for the Mediterranean Countries in six sectors<sup>9</sup> with clear investment needs for the period up to 2010 and in some cases to 2015 with general indication for 2025.

The status of implementation of the legal and policy aspects of the NAPs, in addition to related monitoring, enforcement and reporting systems, are presented in document 379/6 (pending validation by the CPs). Implementation of the investment portfolios, as foreseen in the NAPs, is carried out by Union for the Mediterranean (UFM); an intermediate report in this regard is presented in document UNEP(DEPI) MED WG 397/Inf.9.

Concerning the legal and policy frameworks, and monitoring, enforcement and reporting processes, the Mediterranean countries are found to be generally supportive of NAP implementation. Challenges facing the CPs, however, include implementation of the regional plans, systematic monitoring for all discharged pollutants, enforcement of permitting requirements, reporting and public access to information on the state of the environment.

With regard to fulfillment of the investment portfolios, it is not possible to come to a concrete conclusion as to the status of implementation at this stage, as the UFM evaluation is still in progress. However, the CPs are facing many challenges for allocating the necessary financial resources. On the other hand, there are success stories where countries were able to attract financial assistance from international donor organizations.

**Legally binding measures:** Six legally binding measures (regional plans) were elaborated and adopted in the framework of the implementation of Articles 5 and 15 of the LBS Protocol. The origin of these measures can be traced back to the year 2008 when MED POL Focal Points agreed to establish a List of 'action' priority substances.<sup>10</sup> In principle, it was agreed that in order to propose measures, the substance:

- a) is covered by regional and/or international instruments regulating its use, release or phasing out;
- b) should have an Emission Limit Value (ELV) or its ELV is under development either at national or at regional levels;
- c) and/or its high input could represent a risk to the marine environment or human health; and

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<sup>6</sup> NAPs were approved by the Mediterranean countries and endorsed in 2005 by the 14<sup>th</sup> Contracting Parties meeting in Slovenia.

<sup>7</sup> UNEP/MAP (2006). Implementation of the Strategic Action Programme to Address Pollution from Land-Based Activities. National Action Plans - Synopsis. UNEP(DEPI)/MED WG289/Inf.3.

<sup>8</sup> UNEP/MAP (2006). Regional Review of NAPS by Sector of Activity/Substance. UNEP(DEPI)/MED WG289/Inf.4.

<sup>9</sup> (i) municipal sewage, (ii) urban solid waste, (iii) air pollution from mobile sources, (iv) reduction and control of pollution by heavy metals, mercury, cadmium and lead, (v) reduction and control of pollution by organohalogen compounds, and (vi) sound management of wastewater and solid waste from industrial installations.

<sup>10</sup> The 'action' priority substances consist of Nutrients, Metals, Organic metallic compounds, Polychlorinated Biphenyls (PCBs), Polychlorinated dibenzodioxins (PCDDs), Polychlorinated dibenzofurans (PCDFs), Total Suspended Particulates, Total Volatile Organic Compounds, Nitrogen Oxides, NH<sub>3</sub>, Sulfur Oxide, and POPs.

d) the parties may propose additional substances at the Contracting Parties meeting.

Based on this process, the following Regional Plans were prepared and adopted in 2009 and 2012:

- *Reduction of BOD<sub>5</sub> from urban wastewater (Decision IG.19/7).*
- *Elimination of Aldrin, Chlordane, Dieldrin, Endrin, Heptachlor, Mirex and Toxaphene (Decision IG.19/8).*
- *Phasing out of DDT (Decision IG.19/9).*
- *Reduction of inputs of Mercury, BOD<sub>5</sub> (from food industries) and ten POPs (Decision IG.20/8.1).*
- *Reduction of BOD from food sector (Decision IG.20/8.2).*
- *Elimination of and phasing out new POPs of the Stockholm Convention (Decision IG.20/8.3).*

Most of the regional plans call on the Contracting Party to adopt national emission level values for the relevant pollutants within agreed timetables. Deadlines are set for meeting the targets emission level values (where applicable). The Decisions also address the issue of monitoring discharges, implementing the necessary enforcement measures and reporting.

Another Regional Plan on Marine Litter Management is in process of preparation and expected to be submitted to COP 18, 3-6 December 2013, Istanbul, Turkey.

**Other regional policies and plans:** MED POL has prepared a number of other policies and regional plans. Some of these plans were formally adopted by the different meetings of the Contracting Parties, including:

- *Plan on reduction of input of BOD by 50% by 2010 from industrial sources for the Mediterranean region (COP 13, Catania, Italy, 2003).*
- *Plan for the reduction by 20% by 2010 of the generation of hazardous wastes from industrial installations for the Mediterranean region (COP 13, Catania, Italy, 2003).*
- *Plan for the management of hazardous waste, including inventory of hazardous waste in the Mediterranean region (COP 13, Catania, Italy, 2003).*
- *Plan for the management PCBs waste and nine pesticides for the Mediterranean Region (COP 13, Catania, Italy, 2003).*
- *Strategic framework on marine litter management (COP 17, Paris, France, 2012).*

Status of implementation of the regional plans adopted in the framework of Article 15 of the LBS Protocol in 2009 and 2012 and of the other regional policies as explained above has not been assessed to date. It is therefore important to evaluate their implementation effectiveness in order to take the relevant findings into account while formulating new or updating existing measures.

**Technical guidelines** were prepared in cooperation with other agencies mainly WHO in the framework of the LBS, Hazardous Waste and Dumping Protocols. A summary list of these guidelines is included in Annex III.<sup>11</sup>

Technical guidelines were developed in various areas such as management and reuse of municipal and industrial wastewater, pollution monitoring and inspection, management of coastal litter, dredged materials, seawater desalination, guidelines on Best Available Techniques (BATs) and Best Available Practices (BEPs), etc., in addition to a considerable number of reference methods and standards related to marine pollution and quality. Some the adopted guidelines in particular those related to the implementation of Dumping and HW Protocols needs update as appropriate in light of recent developments under the respective global conventions.

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<sup>11</sup> Detailed information can be found in the document on "Assessment of the SAP Regional Activities".

In addition the implementation of Regional Plans require the formulation of new or updating the existing guidelines in order to enhance BAP, BEP and SCP tools.

**Monitoring:** Starting with MED POL Phase I Programme (and Phase II), focus was on monitoring of the quality of the marine environment. MED POL's Phase III monitoring activities focused on the monitoring of contaminants at Mediterranean hot spots and coastal waters to attain site-specific temporal trends with appropriate and consistent monitoring strategy. Presently, MED POL Phase IV is following-up the implementation of national monitoring programmes consisting of state and trend monitoring, compliance monitoring, biological effects monitoring, and eutrophication monitoring. The Contracting Parties with active monitoring programmes prepare and submit to MED POL yearly national monitoring reports.<sup>12</sup>

The first evaluation of the data collected in the MED POL database was made in 2003 to identify the sampling and analytical variances underlying each monitoring practice. In 2005 a second attempt was made mainly to identify the weakest parts of the adopted sampling strategy. In 2009, when the 10 years benchmark was reached a detailed analysis of variances and trends – where possible - for each monitoring site were performed.

It should be noted that MED POL Phase IV monitoring programme is already generating data for most of the indicators of EO5 (eutrophication) and EO9 (pollution), while no monitoring data exist on EO10 (marine litter) and EO11 (noise).

**Pollution assessment:** The MED POL programme undertook a number of specific assessments on the state of the marine and coastal environments. A summary list of these assessments is included in Annex III. Assessments covered hot spots, marine quality, microbiological pollution, eutrophication, marine litter, persistent organic pollutants, persistent synthetic materials, heavy metals, organohalogen, organophosphorus and organotin compounds, petroleum hydrocarbons, anionic detergents and wastewater reuse practices.

In addition to the above, the MED POL Programme undertook in 2005 a regionally prepared transboundary diagnostic analysis that represents a regional synthesis of actions regarding the protection of the marine environment from land-based activities. MED POL also conducted assessments of the state of the Mediterranean marine environment in 2005, 2009 and 2012. And recently, as part of the Initial Integrated Assessment of the Mediterranean Sea,<sup>13</sup> four sub-regional reports containing information on ecology, status, and pressures affecting coastal and marine ecosystems throughout the four sub-regions of the Mediterranean were completed.<sup>14</sup>

In spite of the significant assessments undertaken by the MED POL programme thus far, it is important to further advance the process of undertaking systematic and regular assessments of the marine environment and pollutants' releases. These assessments should be based on reliable data which are documented and reported on a regular frequency. The assessments should focus on priority issues and substances/pollutants. In fact, assessment should become a principal tool for evaluating the effectiveness of implementation of the regional plans and other adopted national and regional measures.

**Reporting:** Two national baseline budgets of pollutants (NBB) were reported by the Contracting Parties in 2003 and 2008 in order to track reduction trends and to identify actions needed to

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<sup>12</sup> Details of analysis are included in the document "Achievements of the SAP MED targets and most representative contaminants based on NBB (2003 and 2008) analysis".

<sup>13</sup> UNEP/MAP (2012). Initial Integrated Assessment of the Mediterranean Sea: Fulfilling Step 3 of the Ecosystem Approach Process. UNEP(DEPI)/MED IG/Inf.8.

<sup>14</sup> The four sub-regions of the Mediterranean, as defined by the Contracting Parties for practical reasons and the unique purpose of the initial assessment, present a conglomerate of linked coastal and marine ecosystems, with many shared resources, species and common approaches to both environmental monitoring and management. The four sub-regions are the Western Mediterranean; the Central Mediterranean and Ionian; the Adriatic Sea; and the Eastern Mediterranean.

resolve each transboundary priority problem.<sup>15</sup> Analyses of findings revealed that some of the target substances, e.g. some POPs, could not be assessed due to the lack of data. Where data were available, some substances such as PAH, Mercury, Cadmium, Lead, Zinc and Chromium showed a significant reduction into the Mediterranean Sea; thereby SAP targets were achieved. For other substances such as BOD<sub>5</sub>, PCB/PCT, Hexachlorobenzene, PCDD/PCDDF, Butyltin compounds and Copper, SAP targets could not be achieved as levels of substances showed a significant increase. Still in most cases, it was difficult to assess the extent to which discharges have been phased out and whether further efforts must be made. Efforts have been made to pilot the establishment of PRTRs in some countries and this work is ongoing.

The quality of data provided in the process of reporting on measures in the framework of implementation of the Protocols, the SAP/NAPs and the Regional Plans, remains a challenge and needs to be addressed in the short-term. A second challenge is related to the linkage with other reporting systems in use in the region. This issue needs to be addressed in order to avoid duplication and to facilitate the work of the Contracting Parties. Therefore, the quality assurance system for data collection and reporting remains a major challenge.

**Capacity building:** A large capacity building and training programme was organized in cooperation with the World Health Organization (WHO). The purpose of this programme was for building capacities and competencies of representatives from public agencies involved in the protection of the Mediterranean Sea from pollution. In total over 35 training courses were conducted in the period from 1998 to 2012. Workshops topics covered pollution monitoring and inspection, wastewater treatment, water reclamation and reuse, inspection for bathing waters quality, in addition to inter-calibration exercises. Training targeted personnel with responsibilities for operation and maintenance of municipal wastewater treatment plants. Additional courses were also developed for management personnel in topics such as water demand management, sludge treatment and disposal, and sustainable development of coastal areas. Training also was conducted for laboratory technicians in cooperation with the IAEA for testing levels of priority pollutants in the marine environment. A summary list of the workshops is included in Annex III.

Capacity building was also undertaken to assist public agencies in their task for identification and prioritization of hot spots based on a ranking system which was developed to show the severity of each of the effects on the identified hot spots. The scope of training included assistance for estimating costs for rehabilitation activities taking into account the transboundary effects on the environment and human health.

## 6. CHALLENGES TO RESPOND TO NEW CONTEXTS

A careful examination of the contextual framework that shape current and future activities and outputs reveals a number of challenges facing the MED POL Programme. These can be attributed to either (i) achieved outputs from ongoing activities and commitments or (ii) new emerging issues that pave the way for MED POL's future activities.

Concerning achieved outputs and ongoing activities, in spite of considerable achievements as presented above, several issues continue to be relevant and even be strengthened in the future such as the implementation in partnership and collaboration with Partners and other Programmes and Initiatives, of the Regional Plans, NAPs, and SAP, elimination of hot spots, updating, revising as appropriate the existing Regional Plans; further consolidating national pollution monitoring programmes; enhancing the pollution assessment process including the assessment of the effectiveness of NAPs and Regional Plans implementation; and establishing adequate quality assurance processes for data collection and reporting systems using up to

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<sup>15</sup> The operational strategy for implementation of the SAP states that the Mediterranean countries are expected to prepare and update every 5 years a Baseline Budget (BB) of emissions/releases for the SAP targeted pollutants covering all the substantial Land Based Sources or sectors.

date information system tools. Technical assistance to countries should be strengthened and better focused on priorities and country driven.

With regard to new emerging issues, and based on the review of global and regional development with regard to pollution reduction policies, ECAP streamline implications with regard to targets, assessment, monitoring control and prevention measures, the major challenges are related to:

- a) developing point value targets in the framework of ecosystem approach; Such target values should be fully taken into account while revising in the future policy instruments and measures such as NAP/SAP, Regional Plans and preparing new Regional Plans (programmes of measures and timetables);
- b) extending and adjusting the regional and national monitoring programmes beyond coastal zone as appropriate in line with the ECAP integrated monitoring programme of MAP; ( EO 5,9,10,11).
- c) enhancing and implementing in concrete ways the harmonization and synergies with relevant pollution related global/regional conventions, regional initiatives and programmes, to reflect global agenda according to the Mediterranean specificities ;
- d) formulating of Regional Plans for priority pollutants and sectors in the framework of Article 15 of the LBS Protocol taking fully into account ecosystem approach outputs; and
- e) ensuring linkages with ECAP timeframe including harmonization among regional seas in the framework of implementing the ecosystem approach . These ongoing outputs and new emerging issues define the breadth of the challenges that MED POL needs to address; namely how to streamline future activities by building upon past and present outputs with the aim of streamlining the implementation of the ecosystem approach in the field of pollution reduction and control and effectively support the Contracting Parties to comply with their obligations and commitments under the three Protocols and the Legally Binding Measures.

## **7. PROPOSED PRIORITY ISSUES FOR CONSIDERATION BY MED POL FOCAL POINTS**

### **7.1 SAP/NAP Implementation (Article 5 of the LBS Protocol)**

The priority issues presented below address SAP/NAP implementation and the need to their update

*In the short to medium term:*

- Based on the new priority issues identified in the Integrated Initial Assessment and sectoral sub-regional reports on pollution;<sup>16</sup> the pressures and impacts identified in the sub-regional reports on pollution;<sup>17</sup> the socioeconomic analysis; obligations and commitments adopted under the regional plans; the new monitoring requirements stemming from the integrated monitoring programme; and the need to identify a clear investment Portfolio for the period 2015-2025, ***it is recommended to revise and update the National Action Plans (NAPs) during the next biennium***, taking into consideration that the investment component of the

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<sup>16</sup> New priority issues include water quality, hazardous substances, desalination, aquaculture, eutrophication, invasive species and pathogen releases, and increased conflicts over reduced access and availability of space for other uses.

<sup>17</sup> Pressures and impacts in the four sub-regions include contamination by hazardous substances, dumping activities, nutrients and organic matter enrichment, biological and physical disturbance, effects of underwater noise and marine litter, climatic change effects and deep sea modifications.

NAPs present clear financial commitments for the period up to 2010 and in some cases to 2015 and some of them with general indication for 2025.

- Based on the current level of achievement of the SAP targets; their long term implementation timetable; and lack of data to enable using no longer the regional flat target approach, and the work still required to set point/quantifiable values for all GES and targets (EO 5, 9 and 10) in the framework of ecosystem approach, ***it is recommended to consider revising the SAP MED and its targets by the end of the implementation timetable of the Regional Plans (2015-2017)*** coinciding with the assessment cycle set in the framework of the ecosystem approach (6-year cycle). SAP MED Revision should fully streamline ECAP GES targets, operational targets and measures.
- Based on recent assessments on the state of the environment and on achievements of SAP targets, ***it is recommended to address the significant threats influencing quality of the marine environment on a priority basis***. Special attention should be given to elimination of hot spots and hazardous substances such as heavy metals, POPs, petroleum hydrocarbons, butyltin compounds and nutrients. **The 'List of Priority Substances' should be subjected to regular follow-up and updating through a standardized procedure to be agreed upon by the MED POL Focal points.**

#### In the medium to long term

Based on the roadmap for implementation of the ecosystem approach and the proposed concept for aligning the SAP MED and ecosystem approach process steps as presented in Annex IV, it is recommended to streamline ECAP in the process of formulating the updated NAPs based on the SAP and develop a methodology and guidance document for regularly updating the NAPs for this purpose.<sup>18</sup>

#### 7.2 Further implementing Articles 7 and 12 of the LBS Protocol in coherence with ECAP targets

In addition to the ECAP streamlining in NAP/SAP, it is imperative that work further proceeds with the necessary assessments and analysis to enable the Contracting parties to agree on concrete point/quantifiable values in line with Article 7 of the LBS Protocol for the entire list as appropriate of the agreed ECAP Pollution related indicators, for Ecological Objective 5 on eutrophication, Ecological Objective 9 on pollution, and Ecological Objective 10 on marine litter.. In this regard further work is still required towards elaborating specific standards for the indicators under Objectives 5, 9, 10 and 11, including reference methods for monitoring purposes. Furthermore, the scope of monitoring activities should be extended along the lines of the ecological objectives thereby covering a wider spectrum of indicators and focusing both on coastal and open sea waters, where appropriate as well as include monitoring of cumulative and combined effects of pollution and other types of pressures (e.g. fisheries).

Threats from land based sources as well as from other sources should be monitored in a systematic manner, and the interaction among the threats should be recognized. There is a need to built synergies with the regular monitoring processes of relevant UN agencies (Regular process) and the EU Marine Strategy Framework Directive (MSFD) and other monitoring programmes implemented in the region with a view to sharing data and enhancing the effectiveness of environmental monitoring in the Mediterranean on the regional and national levels.

Finally countries should be given continuous support for implementation of the integrated monitoring programme and in this respect, quality assurance processes should be strengthened and be fully incorporated into national monitoring processes.

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<sup>18</sup> Recommend updating the document UNEP/MAP (2004). Guidelines for preparation of National Action Plans for the reduction of pollution of the Mediterranean from Land-Based Sources. UNEP(DEC)/MED/GEF WG.245/3.



7.3 Preparing and implementing additional Regional Plans (Programmes of measures in accordance with Articles 5 and 15 of the LBS Protocol ) to gradually extend their scope to other sectors and substances in coherence with ECAP targets

Additional efforts should be exercised to address pollution causing eutrophication in agriculture by promoting rational use of fertilizers and reduction of nutrient loss based on application of BEPs and BATs. Efforts should be exercised to address pollution from urban wastewater treatment plants and desalination plants in urban coastal areas, and for sludge disposal by introducing BEPs and BATs and SCP tools. Finally, priority should be given to addressing pollution **from land-based sources** and implementing the Regional Plans **in designated hot spot and sensitive areas**.

7.4 Enhancing breadth of the reporting system as a valid instrument to monitor the effectiveness of NAP/SAP and Regional plans implementation as well as the achievement of objectives and targets set in the ECAP regarding pollution ( EO 5,9,10,11) and H2020 indicators

The National Baseline Budget of Pollutants (NBB) should be further developed as an on line reporting system to be reported annually. It should also cover priority pollutants and sectors according to the objectives and targets set within the framework of the Ecosystem Approach. The NBB should be supported by PRTR/e-PRTR establishment in all countries. Relevant guidelines should be adopted by the MED POL Focal Points. There is a need to align where appropriate the NBB/PRTR system and H2020 reporting (in order to avoid double reporting. Much more frequent assessment and publication of the of NBB data on the MAP website should be also considered

7.5 Using the Regional Seas Conventions and Protocols as a platform to implement global conventions and enhancing regional cooperation

As explained in chapter IV, there are several global and regional conventions, programmes and initiatives relevant to MED POL objectives. It is recommended to:

- a) join the global partnerships on nutrient and marine litter to contribute and benefit projects established under the UNEP/GPA/Manila Declaration with regards to reduction and control of wastewater, marine litter and pollution from fertilizers.
- b) further strengthen bilateral cooperation with the Basel and Stockholm Conventions work with regards to the implementation of framework for the environmentally sound management of hazardous wastes, in the field of combating illegal traffic of HW and POPs.
- c) establish direct cooperation with London Dumping Protocol with regards to different aspects of implementation including the relevant guidelines update and implementation and facilitating implementation at national level. This will become more important in view of the expected entry into force the Barcelona Convention Dumping Protocol 1996 amendments
- d) enhance exchange of experience with the other regional sea conventions (OSPAR, HELCOM) with regards to environmental; and follow up of MSFD work related to Ecological Objectives 5, 9, 10 and 11 ( targets, measures, monitoring protocols, quality objectives,;
- e) establish where appropriate collaboration with LRTAP Convention for the exchange of information and technologies with regards to transfer of air pollution and make use as appropriate of methodologies and tools developed.

## 8. Questions for discussions

The MED POL focal points are invited to discuss the points raised in this “Issue Paper” and to express their opinion in particular on the following issues:

- Proposed modalities to update NAP/SAP/Existing Regional Plans/Programmes of measures in short, medium and long term in coherence with the ecosystem approach.
- Ways and means to focus on priority basis on the implementation of existing Measures adopted in 2009 and 2012 as well as to prioritize pollutants with the view to develop where appropriate additional Regional Plans/Programme of measures - in the short, medium and long term.
- What would be the most important UNEP/MAP MED POL and CP/RAC technical assistance outputs that would support further implementation of NAP/SAP, existing measures and their regular review, or where appropriate, update and or development of new measures.
- Ways and means to enhance data quality and reporting processes for both pollutants' releases and marine pollution based on ECAP Ecological Objectives on nutrients, pollutants, litter and noise and the other requirements of and obligations under the three Protocols
- Concrete ways and means to ensure synergy with the relevant Global Conventions, Regional Initiatives, Programmes, Projects for the purpose of facilitating the implementation of NAPs, Regional Plans, Protocols, ensure harmonized technical reporting and coordinated technical assistance and capacity building to Contracting parties.

## ANNEX I

Evolution of the MED POL Programme from inception in 1975 to date can be described based on the following information:

<b><i>MED POL Programme Phase</i></b>	<b><i>Mandates of the MED POL Programme</i></b>
<i>Phase I (1975-1981)</i>	<ul style="list-style-type: none"> <li>• <i>Focus on pollution monitoring and assessment.</i></li> <li>• <i>Substantive support to research institutions; training and capacity building regarding pollution monitoring programmes.</i></li> <li>• <i>Support and facilitation of negotiations for the Convention and the Dumping Protocol.</i></li> <li>• <i>Provision of laboratory services and instrumentation.</i></li> </ul>
<i>Phase II (1982-1995)</i>	<ul style="list-style-type: none"> <li>• <i>Support and facilitation of negotiations for the LBS and Offshore Protocols, and amendments of the Dumping Protocol.</i></li> <li>• <i>Continued support for research and monitoring.</i></li> <li>• <i>Streamlined activities with the Barcelona Convention and its Protocols.</i></li> <li>• <i>Continued support and provision of laboratory services and instrumentation.</i></li> </ul>
<i>Phase III (1996-2005)</i>	<ul style="list-style-type: none"> <li>• <i>Support for the process for amending the LBS Protocol.</i></li> <li>• <i>Enhanced focus on pollution control policies and measures.</i></li> <li>• <i>Continued support to national monitoring programmes.</i></li> <li>• <i>Provision of laboratory services and instrumentation.</i></li> <li>• <i>Provision of technical support to national institutions.</i></li> <li>• <i>Support for elaboration, implementation and follow-up of the Strategic Action Programme (SAP), the National Action Plans (NAP) and related regional activities.</i></li> </ul>
<i>Phase IV (2006-2013)</i>	<ul style="list-style-type: none"> <li>• <i>Assistance to the Contracting Parties for implementation of the LBS, Dumping and Hazardous Waste Protocols.</i></li> <li>• <i>Assistance to the Countries for implementation of the SAP and the National Action Plans.</i></li> <li>• <i>Evaluation of the status and trends of pollution in the Mediterranean eco-regions.</i></li> <li>• <i>Support for elaboration and implementation of legally binding measures and regional plans under Articles 5 and 15 of the LBS Protocol.</i></li> <li>• <i>Preparation of several policy documents and guidelines related to pollution control from land-based sources and activities.</i></li> </ul>

## ANNEX II

This annex contains information on Ecological and Operational Objectives 5, 9, 10 and 11 and their Indicators.

Ecological Objective	Operational Objectives	Indicators
<b>EO5 – Eutrophication</b> Human-induced eutrophication is prevented, especially adverse effects thereof, such as losses in biodiversity, ecosystem degradation, harmful algal blooms and oxygen deficiency in bottom waters.	Human introduction of nutrients in the marine environment is not conducive to eutrophication	Concentration of key nutrients in the water column
		Nutrient ratios (silica, nitrogen and phosphorus), where appropriate
	Direct effects of nutrient over-enrichment are prevented	Chlorophyll-a concentration in the water column
		Water transparency where relevant
		Number and location of major events of nuisance/toxic algal blooms caused by human activities
	Indirect effects of nutrient over-enrichment are prevented	Dissolved oxygen near the bottom, i.e. changes due to increased organic matter decomposition, and size of the area concerned
<b>EO9: Pollution</b> Contaminants cause no significant impact on coastal and marine ecosystems and human health	Concentration of priority 19 contaminants is kept within acceptable limits and does not increase	Concentration of key harmful contaminants in biota, sediment or water
	Effects of released contaminants are minimized	Level of pollution effects of key contaminants where a cause and effect relationship has been established
	Acute pollution events are prevented and their impacts are minimized	Occurrence, origin (where possible), extent of significant acute pollution events (e.g. slicks from oil, oil products and hazardous substances) and their impact on biota affected by this pollution
	Levels of known harmful contaminants in major types of seafood do not exceed established standards	Actual levels of contaminants that have been detected and number of contaminants which have exceeded maximum regulatory levels in commonly consumed seafood
		Frequency that regulatory levels of contaminants are exceeded
	Water quality in bathing waters and other recreational areas does not undermine human health	Percentage of intestinal enterococci concentration measurements within established standards
		Occurrence of Harmful Algal Blooms within bathing and recreational areas
<b>E10: Marine litter</b> Marine and coastal litter do not adversely affect coastal and marine	The impacts related to properties and quantities of marine litter in the marine and coastal environment are minimized	Trends in the amount of litter washed ashore and/or deposited on coastlines, including analysis of its composition, spatial distribution and, where possible, source
		Trends in amounts of litter in the water column, including micro-plastics, and on the seafloor
	Impacts of litter on marine life are controlled to the maximum extent practicable	Trends in the amount of litter ingested by or entangling marine organisms, especially mammals, marine birds and turtles
<b>EO11: Energy including underwater</b>	Energy inputs into the marine environment, especially noise from human	Proportion of days and geographical distribution where loud, low and mid-frequency impulsive sounds exceed levels that are likely

<b>noise</b> Noise from human activities cause no significant impact on marine and coastal ecosystems	activities is minimized	to entail significant impact on marine animals
		Trends in continuous low frequency sounds with the use of models as appropriate

### ANNEX III

This annex contains summary information on prepared technical guidelines, pollution assessment reports, and capacity building training and workshops undertaken by the MED POL Programme.

**Technical guidelines:** Following is a summary list of technical guidelines undertaken by MED POL, and divided by subject inter alia:<sup>19</sup>

- Six guidelines on municipal sewage and sludge treatment and disposal.
- Two guidelines for the safe management of industrial wastewater for the Mediterranean region.
- Two guidelines on wastewater use in irrigation.
- Guidelines for river pollution monitoring programme for the Mediterranean Region.
- Guidelines on safe management of coastal litter for the Mediterranean Region.
- Two guidelines for the application of Best Available Techniques (BATs) and Best Available Practices (BEPs) in industrial sources of BOD, nutrients and suspended solids and for rational use of fertilizers and the reduction of nutrient loss from agriculture for the Mediterranean region.
- Guidelines for the management of dredged materials.
- Guidelines for the management of artificial reefs.
- Guidelines for the management of inert decontaminated materials.
- Sea water desalination in the Mediterranean: Assessment and Guidelines.
- Guidelines on environmental inspection systems for the Mediterranean region.
- A considerable number of reference methods regarding monitoring of marine pollution including pollution from rivers.
- Common standards related to marine quality in accordance with Article 7 of the LBS Protocol.
- Potential priority substances to be regionally addressed through a differentiation mechanism based on Emission Limit Values.

**Pollution assessment:** Following is a summary list of assessments undertaken by MED POL, inter alia:<sup>19</sup>

- State of the Marine and Coastal Environment.
- Assessment of Wastewater Reuse Practices.
- Assessment of the state of microbiological pollution.
- Assessment of the state of eutrophication.
- Assessment of the Status of Marine Litter.
- Assessments of the state of pollution of the Mediterranean Sea by persistent synthetic materials, which may float, sink or remain in suspension.
- Assessment of the state of pollution of the Mediterranean Sea by cadmium and cadmium compounds.
- Assessment of the state of pollution of the Mediterranean Sea by mercury and mercury compounds. UNEP/MAP: Athens, 1987.
- Assessment of the state of pollution of the Mediterranean Sea by Zinc, Copper and their Compounds.
- Assessment of airborne pollution of the Mediterranean Sea by Sulphur and Nitrogen Compounds and Heavy Metals.
- Assessment of organotin compounds.
- Assessment of the state of pollution of the Mediterranean Sea by organohalogen compounds.

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<sup>19</sup> Detailed information can be found in the document on “Assessment of the SAP Regional Activities”.

- Assessment of the state of pollution of the Mediterranean Sea by organophosphorus compounds.
- Assessment of the state of pollution of the Mediterranean Sea by Radioactive Substances.
- Assessment of the state of pollution in the Mediterranean Sea by Carcinogenic, Mutagenic and Teratogenic Substances.
- Assessment of the state of pollution of the Mediterranean Sea by petroleum hydrocarbons.
- Assessment of the state of pollution of the Mediterranean Sea by anionic detergents.
- Transboundary diagnostic analysis (T.D.A.) for the Mediterranean Sea (2005).
- Diagnosis of the New POPs in the Mediterranean.
- Diagnosis of Mercury in the Mediterranean.
- Identification of priority hot spots and sensitive areas in the Mediterranean (1999).

**Capacity building:** Following is a summary list of capacity building and training workshops undertaken by MED POL, inter alia: <sup>19</sup>

- Fourteen training courses on Municipal Wastewater Treatment Plants Operation and Maintenance.
- Three training courses on water reclamation and reuse.
- Four training courses for operators and managers of wastewater treatment plants.
- Seven training courses on pollution monitoring and inspection.
- Two workshops on sustainable development of Mediterranean coastal areas.
- One training course on water demand management and policies.
- Four training courses organized in Monaco by MESL-IAEA on the determination of chlorinated pesticides and PCBs and on the determination of heavy metals.

## ANNEX IV

The following table compares steps for development of the NAPs based on the SAP and the ecosystem approaches. As can be seen from the side-by-side comparison, the Initial Integrated Assessment with its priority issues and the developed Ecological and Operational Objectives, targets and indicators are synonymous to the findings of the transboundary diagnostic analysis along with its identified polluting sectors and the LBS priority pollutants. The monitoring strategy and the management plans are synonymous with the SAP process for development of the NAPs.

<b>Stage in process</b>	<b>Preparation of NAP based on the SAP</b>	<b>Preparation of NAP based on the ecosystem approach<sup>20</sup></b>	<b>Status of implementation and recommended actions</b>
<b>LBS Protocol and the Strategic Action Programme (regional level)</b>	<i>Preparing regional transboundary diagnostic analysis of the Mediterranean Sea</i>	<i>Establishing the vision for an ecosystem approach</i>	<i>Completed or in final stages (undertaken on a regional level)</i>
	<i>Identifying sectors on a regional level</i>	<i>Elaborating three strategic goals to achieve the vision on a regional level</i>	
	<i>Identifying priority list of pollutants on a regional level</i>	<i>Undertaking an initial assessment on a regional level to determine priority issues, information availability as wells as gaps the need to be filled</i>	
		<i>Deciding on ecological objectives</i>	
		<i>Determining operational objectives and associated indicators (GES) and identifying targets or thresholds for those indicators on a regional level</i>	
<b>National Action Plan (NAP) (national level)</b>	<i>Conducting NDA and NBB on a national level</i>	<i>Establishing a baseline on state of environment where appropriate and develop a monitoring strategy</i>	<i>In progress (undertaken on a national level)</i>
	<i>Developing an issue/impact matrix on the national/administrative region(s)</i>	<i>Elaborating specific management plans and actions that will ensure that the ecological objectives and strategic goals are met</i>	<i>Not initiated yet Recommend preparation of a guidance document titled: "Guidelines for updating the NAPs for reduction of pollution of the Mediterranean Sea based on the Ecosystem Approach"</i>
	<i>Preparing administrative regional plans</i>		
	<i>Setting-up national sectoral plans</i>		
	<i>Developing national action plan</i>		
	<i>Establishing a national list of priority actions</i>		

<sup>20</sup> UNEP/MAP (2012). Support to the Barcelona Convention for the Implementation of the Ecosystem Approach, including the Establishment of MPAs in open seas areas, including deep sea. UNEP(DEPI)/MED WG.372/4.