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A NEW STRATEGY TO ACHIEVE POLLUTION REDUCTION IN THE FRAMEWORK OF THE SAP: THE BURDEN SHARING CONCEPT

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1. INTRODUCTION

The Contracting Parties to the Barcelona Convention committed themselves to a regional effort to reduce land-based inputs of polluting substances into the Mediterranean sea that are likely to cause serious disruption of the marine ecosystem. To that end, pollution reduction targets up to the year 2025 were set up in the framework of the Strategic Action Programme (SAP) to address Land Based Activities. In order to concretely meet their commitments, the Mediterranean Countries prepared National Action Plan (NAPs) through an effective multistakeholder participatory process. NAPs were based on National Diagnostic Analyses (NDAs), National Baseline Budgets (NBBs) of pollution emissions and releases for the year 2003 and Sectoral Plans (SPs). The NAPs, prepared and adopted by the end of 2005, describe in concrete terms the ways and means through which each Contracting Party is planning to meet its SAP commitments through short-term priority actions (2010) and long-term actions (2025).

The process of implementation of the NAPs by the countries is to date based on the decision of the 12th meeting of the Parties in Monaco in 2001 to make use of the ”flat rate” (i.e. same responsibility and same reduction targets for all countries) as the agreed methodology to achieve the pollution reductions and fulfill the SAP targets. The decision derived from the fact that at that time not enough data and information on pollution sources and inputs was available to possibly consider other approaches than the “flat rate”. While entering in the phase of concrete implementation of the expected pollution reductions, and considering that with the expected entry into force of the LBS Protocol a new text based on the present SAP will become legally binding, the Contracting Parties recommended to the Secretariat to review and analyze the possible application of different approaches for achieving pollution reductions based on the burden sharing concept and differentiation principles.

In this context, supported by the recent availability of reliable data and information deriving from the NDAs, the NBBs, and the NAPs, MED POL undertook a peer review and analysis in order to assess the feasibility, the fairness and the concrete implications of a new strategy covering the application of the burden sharing principle (differentiated responsibility) in the implementation of the NAPs commitments (pollution reductions), that is now proposed for comments and possible follow up (see Chapter 3).

2. A NEW STRATEGY FOR AN EFFECTIVE IMPLEMENTATION OF THE SAP: PRINCIPLES AND CHARACTERISTICS

The new proposed strategy, that by itself includes the “polluter pays” and the “precautionary” principles embedded in the SAP, is designed to respond to a number of characteristics:

a) Visionary and aspirational

The strategy should reflect the socio-economic and cultural diversity of the Mediterranean countries and inspire the local community, the industry and all stakeholders. The implementation of the strategy could effectively contribute to the renovation of local and national society through the improvement of environment and the creation of a new dynamism in the local development plans. Furthermore, the proposed strategy would strengthen the national and regional cooperation to better respond to the major environmental threats of the region.

b) Consistent with other relevant strategic goals and international obligations

Where possible, the strategy should look for synergies between national, regional and international policies. The key is to have complementary strategies that reinforce one another.

c) Fair, equitable and balanced

The strategy must be fair, equitable and balanced to foster public support at local, national and regional level. Industry should not consider that the implementation of SAP commitments is an additional burden. Competitiveness should be fostered throughout the region.

d) Affordable and realistic

Local and national authorities would not shut companies down for failing to comply with SAP commitments; the strategy should enable national authorities, the industry, the local authorities and the civil society to work together to meet their commitments by creating dialogue and ensuring a common understanding of the SAP goals.

e) Comprehensive and flexible

The strategy will include:

- Public awareness and education programmes and the involvement of all stakeholders;
- Incentives;
- Technical assistance, training programmes and financial assistance to facilitate the implementation of the commitments.

f) Enforceable and measurable

To ensure its effective implementation, the strategy should set objectives and targets which could be met as well as efficient and consistent systems of monitoring and verification of compliance.

A key aspect of the proposed strategy underlined hereafter is that it would allow the Contracting Parties to use different differentiation mechanisms to help them comply with their obligations. This means that the possible strategy should not only provide countries with cost-effective means to cut their emissions but should also create additional incentives for business and industry to invest in emission-reduction projects elsewhere. In turn, it would stimulate the transfer in the region of advanced, environmentally sound technologies, giving tangible support to the efforts to achieve the SAP commitments and contribute to urban and industrial sustainable development in the region while opening and strengthening cooperation throughout the region. Finally, the strategy is expected to offer to the Mediterranean Countries a dynamic process for the implementation of their commitments.

3. IMPLEMENTING THE STRATEGY: POSSIBLE OPTIONS AND IMPLICATIONS

3.1 Identifying the targets

Before embarking in a discussion on the possible application of the differentiation principles and of their practical implications, it would be opportune to consider a new possible approach related to the substances to be targeted in the pollution reduction process.

The review and analysis of the NDAs, NBBs and NAPs made by MED POL indicated that only a selected number of substances out of the exhaustive list included in the SAP could be successfully addressed in a short-term pollution reduction process in view of the availability of reliable data and the capability of the countries to address those issues.

3.1.1 Until 2010

Based on this fact and taking into consideration the regional and international developments, such as POPs, Basel and PICs Conventions, in the field of management of chemicals and pollution in general, it is proposed that NAPs would target in the period until the year 2010 pollution reductions of only a limited number of substances. The substances could include:

a. Liquid releases:
    i. BOD from Industrial sources
    ii. BOD from urban waste
    iii. Total nitrogen
    iv. Total Phosphorus
    v. Mercury
    vi. Cadmium
    vii. Lead
    viii. Hydrocarbons
    ix. Oils and greases
    x. Phenols
    xi. Hazardous waste (luboil, obsolete chemicals including POPs and batteries)
b. Gaseous emissions:
    i. TSP
    ii. VOC
    iii. PCDD/PCDF
    iv. Nitrogen oxides
    v. NH3

3.1.2 Until 2015

Concerning the targets to set for the year 2015 the following substances were identified:

1- Other air pollutants
2- PAHs
3- Organometallic compounds of Mercury, Lead and Tin
4- Zinc, Copper, Chrome
5- Halogenated Aromatic compounds
6- Chlorinated Phenolic Compounds
7- Organohalogenated pesticides
8- Halogenated Aliphatic Hydrocarbons
9- Chlorinated Paraffins
10- Hazardous wastes (except Batteries, Luboil and obsolete chemicals)
11- Substances from agriculture activities (Nutrients, pesticides)

As to the above substances, it is proposed to rely on the data deriving from future updating of the NBBs and from future assessment reports which will allow an evaluation of their importance and relevance. A decision on their inclusion in the list of targets for pollution reduction (including

possible deadlines) will be therefore postponed to a later date and proposals will be submitted to Contracting Parties for approval.

3.1.3 Until 2025

Concerning long-term targets (i.e. for the year 2025), it is proposed that the MED POL Programme, throughout its biannual programme of activities, would develop measures (similar to measures adopted by OSPAR) to identify and prioritize an additional list of substances of possible concern to be addressed by specific control programmes to prevent and/or reduce and/or eliminate their inputs into the marine environment. The identification and prioritization of substances of possible concerns will be based on a multistakeholder consultation process and on the best available information related to their:

- toxicity,
- persistence and,
- liability to bioaccumulate.

3.2 Continuing working on the basis of the ”flat rate”

As mentioned earlier, the Contracting Parties to the Barcelona Convention at their 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 pollution reduction targets. The approach included an internal (national) flexibility measure for which each country would reduce by (x%) its aggregate releases of a targeted pollutant by the year (y) with a baseline budget of emissions and releases for each targeted pollutant as reference. This approach was meant to ensure that equity between Parties would govern the long-term implementation of the SAP commitments.

In order to apply this approach it was agreed that:

1. each Party would set up its own national "baseline budget" of pollution releases and emissions for the year 2003 for each of the targeted pollutants;
2. the "national baseline budget" for a SAP targeted pollutant would be the sum of the individual releases;
3. any Party may transfer internally release reduction targets between different activities generating the same targeted pollutants according to the socio-economic and environmental priorities prevailing in the country.

The Secretariat believes that the adoption of the “flat rate” was fully justified at the time of the launch of the SAP and of its initial implementation (1997-2005) as the most convenient strategy for the implementation of SAP, mostly in view of a generalized lack of data and information on pollution sources and inputs that did not allow any other option. In practice, the “flat rate” reductions result, from a wider perspective and from similar international experiences, neither efficient, not environmentally effective and not feasible as a means of achieving concrete results. In fact, in the case of the Mediterranean countries, the analysis of the recent and reliable data and information included in the NDAs, NBBs and NAPs showed that most of the countries, because of socio economic constrains, would not be able to implement in full the actions described in the NAPs. In addition to that, countries would face very different costs of reduction.

The table here below, elaborated on the basis of the information contained in the NAPs, shows a rough financial analysis of the minimum cost of priority actions that countries would need to implement in order to meet the SAP commitments, on the basis of the “flat rate”.

Country	WWTP* M. Euros	Solid waste M. Euros	Industrial TreatmentM. Euros	Total M Euros
Albania	209	30	19	258
Algeria			143	143
Turkey	310	-	343	653
Lybia	143	56	56	255
Malta	82	14	25	121
Morocco	200	7,4	35,8	243,2
Croatia	357			357
Egypt	142		30	172
France	357			357
Greece	2	0.076700	30,2	32,27
Israel	1874	378		2252
Lebanon	120,7	18		138,7
Serbia-Montenegro	280	31		311
Slovenia	165	53	6.5	224,5
Syria	40	2	51	93
Tunisia	129	20,4	303	452,4

*WWTP: Wastewater Treatment Plant

The data exhibited in the table clearly indicate the unfairness of the financial efforts needed to be deployed for investments by Mediterranean countries to comply with the SAP commitments by the year 2010, if the “flat rate” is retained.

3.3 Applying the differentiated approach to meet the SAP commitments

The adoption of the differentiation principles would consist in the implementation of national priority actions, described in the NAPs and selected on the basis of different options described below, which would allow to fulfill the SAP targets at the regional level. Mediterranean countries would then have different responsibilities vis-a-vis the reductions of inputs of selected substances.

On the basis of the proposed methodology described below, it appears that in order to meet the SAP commitments at the regional level for the period 2010-2015, reduction actions could be limited to specific countries within a defined regional cooperation framework. However, it should be noted that, at a later stage, the Parties would review the process of implementation of the reduction measures for the year 2025 and the overall reduction activities would be split into short, medium and long term actions which could be governed by different processes of differentiations.

In the international context, the application of the differentiated responsibility approach to reduce pollution inputs was extensively discussed, negotiated, and successfully adopted in the framework of the United Nations Framework Convention for Climate Change (UNFCCC) and Kyoto Protocol for the reduction of inputs of a basket of Green House Gases (GHGs).

Mutatis mutandis, the differentiated responsibility approach is proposed by the Secretariat to be considered by the Contracting Parties to the Barcelona Convention as an effective approach to meet the pollution reduction targets of the SAP and the NAPs.

In general, the differentiated approach for pollution reduction is associated to a set of flexibility mechanisms and transfer of technology and know how programmes which could facilitate the implementation of the reduction actions, mobilize cooperation throughout the region and ensure equity fairness, flexibility, efficiency and tractability of the process. Flexibility mechanisms are proposed to be included in the Mediterranean process as well as elements for ensuring transfer of technology and know how, and are reviewed and discussed later in this document.

During the last five years MED POL produced several reports on the state of the Mediterranean marine environment and its pressures that lead to the identification of pollution hot spots and sensitive areas. A comprehensive Transboundary Diagnostic Analysis (TDA) was also prepared and, recently, NDAs, NBBs and Sectoral Plans provided additional and reliable data and information directly from the countries. The Secretariat believes that the above now provide the necessary information to possibly develop a differentiation process to target reduction actions. As a result, some options could be proposed for the implementation of differentiated approach, as follows.

3.3.1 Differentiation through clustering or grouping

The preliminary analysis of the information included in the NDAs and sectoral plans revealed a number of priority issues in each country. As a result, the necessary reduction actions could be clustered or grouped as follows:

- ✓ Actions for reduction of oils and hydrocarbons inputs:
  (Morocco, Croatia, Syria, Italy, Libya, Algeria, Egypt, Albania)

- ✓ Actions for reduction of metals inputs:
  (Albania, Bosnia- Herzegovina, Egypt, Lebanon, Morocco, Syria, Tunisia, Greece, Israel, Italy, Libya, Malta, Algeria)

- ✓ Actions for reduction of pesticides:
  (Israel, Italy, Albania)

- ✓ Actions for reduction of nutrients inputs:
  (All Mediterranean countries)

- ✓ Actions for reduction of inputs of other chemicals included in the NAPs:
  (All Mediterranean countries)

In order to increase the effectiveness of the pollution reduction process, further clustering and differentiation could be performed inside each of the five clusters or groups to reach a more comprehensive and reliable priority cluster.

This option is exclusively based on environmental factors, i.e. the pressures on the marine environment. For this reason, unless the Contracting Parties show a very strong willingness to improve the quality of the marine environment regardless the socio economic burdens that might come out of its implementation, this methodology is considered by the Secretariat at the same level as the “flat rate”: very costly and non meeting the criteria of the new strategy proposed.

3.3.2 Differentiation based on cost of abatement

The second methodology that could be proposed to implement the differentiated approach is based on an analysis of the costs of reduction. It indicates that the regional reduction targets could be met if achieved in selected countries where the costs are lower. The application of this methodology could also provide opportunities both for assisting these countries and promote regional cooperation, transfer of technology and know how.

It should be noted in fact that industrial facilities can abate pollution by scaling back polluting activities through implementation of Cleaner Technology or by diverting resources to cleanup through treatment process. In either case, pollution reduction will entail costs. Hence the Marginal Abatement Cost (MAC) function slopes upward from right to left as pollution falls. The position and slope of (MAC) are affected by factors such as the scale and sectoral composition of production, the average operating efficiency of the firm, the available process technologies and the efficiency of waste treatment technology .For any given level of pollution, more costly pollution control is associated with rightward movement of the MAC function.

Conceptually, abatement cost functions are dual to abatement functions which relate to inputs of capital, labor, energy and materials to pollution reduction. The abatement process frequently reduces more than one air or water pollutant, so joint function estimation is appropriate. For example BOD, COD and TSS can all be reduced by treatment in common facilities.

The Table here below shows that the impacts of the sector and the size of the industry on marginal abatement cost is significant within sectors at constant abatement rates, the MAC ratio between small and large facilities being as high as 40:1. Across sectors, MAC ratios at the same size scale can be as high as 1:15.

In addition to this analysis, the MCA could be highly varied from one country to another.

Table: Sectoral marginal abatement cost ($US/Ton) of industrial BOD

Sector	Abatement Rate %	Small size	Medium size	Large size
Food processing	10	0.86	0.05	0.02
	30	1.2	0.07	0.03
	60	2.53	0.15	0.07
	90	15	0.93	0.44
Textiles	10	1.01	0.52	0.41
	30	1.41	0.72	0.57
	60	2.97	1.52	1.19
	90	18.76	9.6	7.54

In addition, an economic analysis of mine water pollution abatement on a catchment scale study performed in 2003 in the framework of EU ERMITE project showed that the marginal cost of abatement of Zinc, Cadmium and Copper in one country is highly dependant on several factors such as: the geographical location, the level of abatement targeted and the technology. A multi parameter analysis is always necessary to reach the appropriate decision on the cost effectiveness of the measures. (www.**minewater**.net/ermite/ERMITE_D5.pdf)

Therefore, the conclusion is that very large regional savings could be realized through the implementation of the above methodology based on cost of abatement.

3.3.2.1 Regional flexibility mechanisms

The analysis of costs of reduction implicitly leads to make use of regional flexibility mechanisms similar to those under application in the framework of global Conventions. Flexibility mechanisms are instruments, tools and measures developed to achieve environmental objectives in a cost effective manner and at least cost. The adoption and implementation of flexibility mechanisms, as mentioned earlier, could ensure and mobilize a better regional and bilateral cooperation to protect our common good: the Mediterranean Sea.

The application of flexibility mechanisms should not be considered as an incitation to disregard the national policies and measures that should be taken to ensure national reduction of inputs and releases of pollutants into the Mediterranean Sea. In fact, if, on the one hand, regional flexibility measures could be considered only as short term instruments to facilitate, in the most effective way, the implementation of actions which could rapidly resolve the most pressing marine environmental issues, on the other hand, national policies and measures should be seen as the long term legal, institutional and technical responses that should be considered at the national level.

Taking into account the “international flexibility instruments” adopted in the framework of the Kyoto process as well as the geopolitical situation and the socio-economic and environmental specificity of the Mediterranean region, only bilateral and project-based joint implementation of actions could be foreseen.

In general, Joint Implementation is a system in which two countries subject to a reduction, or companies from those countries, would invest in projects that reduce inputs of a specific substance through a short term reduction process; the sponsor country or company could postpone the implementation of its reduction commitments while the sponsored country or company could rapidly comply with its commitments.

The Bilateral Joint Implementation of pollution reduction actions takes into account and makes use of the current political and economical policies between two countries in the framework of a bilateral programme of cooperation. This approach should however be considered only in the case where two countries should reduce, even if in different proportions, the same pollutants in the frame of the agreed differentiated process outlined earlier (e.g. if country A, country B, country C and country D should reduce mercury by X%, Y%, Z% and M% respectively, country A could possibly finance the reduction of Y%, or Z%, or M% of mercury, respectively, in country B, C or D at a lower cost and start its own reduction of releases of X% of mercury through a longer term process. The regional objectives of reduction would be met at a lower cost for country A in comparison with what it should have been spent for reductions in the country).

Project-Based Joint Implementation could be seen as a sector-oriented reductions action. This sectoral system could, as a specific case, be applicable to mother and daughter companies in the region and in general to two companies belonging to the same sector (e.g. oil sector). The rules governing the sponsor and the sponsored countries in the bilateral joint implementation process would be applicable to this case as well.

In this framework, Mediterranean countries could also be divided into groups ("bubbles") responsible for the implementation of different actions, including reduction actions, to reach the SAP commitments and successfully implement the NAPs targets.

In fact the "bubbles" methodology could be very effective in the Mediterranean region due to the existence of two main legal processes (the Barcelona Convention, the LBS Protocol and the SAP on one side and the EU Water Framework and other Directives, the Marine Strategy and the Horizon 2020 Initiative on the other), sometimes different but always compatible and with the same objective to improve the quality of the Mediterranean marine ecosystem and reduce/eliminate land-based pollution. Those two legal processes could therefore be used as the basis for fostering bilateral and project-based joint implementation of pollution reduction actions and thus achieving the same objectives through the creation of adequate cooperation "bubbles".

As an example, a number of hypothetical "Bubbles" combinations could be considered to ensure the implementation of the SAP commitments, such as:

- Bubble -1-: EU countries would ensure only the financing of the reduction measures adopted by non-EU countries without any quantifiable reduction commitments.

- Bubble-2-: Non EU countries would ensure the reduction measures with the financial and technical cooperation of EU countries.

- Bubble-3-: Non-EU European countries would ensure the reduction measures with the financial and technical cooperation of EU countries.

- Bubble-4-: EU countries bordering the Adriatic Sea would ensure only the financing of the reduction measures adopted by non EU countries bordering the same area without any quantifiable reduction commitments.

- Bubble-5-: Non EU countries bordering the Adriatic Sea would ensure the reduction measures with the financial and technical cooperation of EU countries.

- Bubble-6-: Countries bordering the Alboran or Egean Sea or any part of the Mediterranean Sea would ensure close cooperation to implement their commitments to the SAP in the framework of a cooperation agreement(s) under the umbrella of Barcelona Convention.

Finally, and in order to be effective, the implementation of flexibility measures requires the establishment of:

- ✓ rules and procedures, such as eligibility conditions, to participate in to the process,
- ✓ a certification process which provides the necessary proof of the reduction
- ✓ a regional registry procedure for the project which would be implemented under the flexibility measures.

3.3.2.2 Transfer of know how and Technology

Reduction actions in the framework of the differentiated approach and the flexibility mechanisms cannot be properly and effectively implemented without the adoption of adequate transfer of technology and know how processes that can ensure the sustainability of the reduction actions.

In the regional context, “Transfer of technology” can be defined as the process of developing and extending the use of know how and technology among new user groups in different countries.

In the context of the implementation of the SAP, transfer of know how and clean technology is considered essential to help less developed countries in the region and reach regional objectives.

This principle is also present in the text of the 1995 Barcelona Convention where, in art. 4. 4. b) the Parties agree to take all practicable steps to promote, facilitate and finance, as appropriate, the transfer of, or access to, environmentally sound technologies and know-how to other Parties.

The MED POL Programme has been requested by the 14th Meeting of the Contracting Parties to set up a task force to propose a framework mechanism for the transfer of technology to facilitate the implementation of SAP/NAPs in close cooperation with CP/RAC and INFO/RAC.

In this context, five tasks could be developed:

- Technology needs & needs assessments
- Technology information
- Enabling environments
- Capacity building
- Mechanisms for technology transfer

Actions to implement the framework could include the organization of meetings and workshops, the development of methodologies to undertake technology needs assessments, the development of a technology transfer information clearinghouse, including a network of technology information centres, actions by governments to create enabling environments that will improve the effectiveness of the transfer of environmentally sound technologies, and a list of capacity building activities needed for the enhancement of technology transfer under the SAP.

4. CONCLUSIONS AND RECOMMENDATIONS

This document represents the first attempt of the Secretariat to review ways, means and implications of an hypothetical adoption by the Parties of differentiation principles in the pollution reduction process of the SAP and the NAPs. It does not pretend to be exhaustive nor conclusive but it simply aims at highlighting what could be, in the opinion of the Secretariat, the possible advantages and disadvantages of various options. The Meeting is expected to review the document and provide the Secretariat with its first impressions and indications on how and in which direction to proceed.

Although the application of other approaches to substitute the “flat rate” has never been reviewed and discussed until now by national authorities in the framework of MED POL, which means that it is impossible for the Secretariat to foresee any development, the Meeting will nevertheless attempt to draw some draft conclusions and possible recommendations that may

guide the discussion and the future work and eventually lead to the preparation of an agreed roadmap.

The Secretariat has worked with the help of regional experts to design different scenarios related to the application of the “flat rate” and of a number of selected, and appropriate for the region, differentiation principles taken from a basket of international experiences. In addition to the “flat rate”, two principles were examined as more adequate to the Mediterranean region. The opinion of the Secretariat is that to continue to work on the “flat rate” would not be adequate nor effective and it would not result in the achievement of the expected pollution reductions. The application of differentiation through clustering, although theoretically possible, is also considered not adequate since it does not take into account socio-economic constraints prevailing in the region. Unlike, the Secretariat believes that the application of differentiation based on the cost of pollution abatement could be appropriate and its concrete implications should be further studied. In particular, the use of flexibility measures and the cooperation framework provided by the grouping of countries (“bubbles”) around the same objective is feasible, economical and corresponds to the cooperation principles of the Barcelona Convention.

The new strategy that MED POL is proposing in this document is also closely related to the need to prepare the new text based on the present SAP that will become legally binding after the entry into force of the LBS Protocol and the need to find concrete forms of cooperation between MAP/MED POL and the EC for the implementation of, respectively, the SAP and the NAPs and the 2020 Horizon Initiative, all aiming at reduction and elimination of land-based pollution. The Secretariat believes that the new strategy outlined in this document, if eventually adopted by the Parties, could draw the basic lines of the new legally binding text and at the same time provide a good framework for the EC and MAP/MED POL to jointly work for the same long-term objectives.