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First Draft Reports of the evaluation of the implementation of the 2003 Regional Plans on hazardous waste reduction by 2010

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First Draft evaluation of the implementation of the 2003 Regional Plan on hazardous waste reduction by 2010

1. Introduction

The Strategic Action Plan (SAP-MED) is a long term policy framework to combat pollution from land-based sources in the Mediterranean. SAP-MED that was adopted by the Contracting Parties in their 10th Contracting parties meeting in Tunis, 1997 with the view to facilitate the implementation of the LBS Protocol of UNEP/MAP-Barcelona Convention.

Among other activities, the Plan for the reduction by 20 % by 2010 of the generation of hazardous wastes from industrial installations for the Mediterranean region was prepared to assist countries in the long-term implementation of the SAP MED. The plan was adopted by COP 13 (Catania, Italy, 2003) in response to the SAP objective of preparing a Mediterranean Strategy for the Management of Hazardous Wastes, based on the principles of prevention, reduction and reuse.

In this framework, the following targets/requirements with regards hazardous waste generation were particularly established:

SAP-MED on hazardous wastes:

- **By the year 2025, to dispose all hazardous wastes in a safe and environmentally sound manner and in conformity with the provisions of the LBS Protocol and other international agreed provisions.**
- **Over a period of 10 years, to reduce as far as possible by 20 % the generation of hazardous waste from industrial installations.**
- **By the year 2010, to dispose 50 % of the hazardous waste generated, in a safe and environmentally sound manner and in conformity with the provisions of the LBS Protocol and other internationally agreed provisions.**

SAP MED on specific types of hazardous wastes:

- **By the year 2005, to collect and dispose all obsolete chemicals in a safe and environmentally sound manner.**
- **Plan for the reduction by 20 % by 2010 of the generation of hazardous wastes from industrial installations for the Mediterranean region**
- **By the year 2005, to collect and dispose 50 % of used lubricating oil in a safe and environmentally sound manner.**
- **By the year 2025, to dispose all used batteries in a safe and environmentally sound manner and in conformity with the provisions of the Protocol and other internationally agreed provisions.**
- **Over a period of 10 years, to reduce by 20 % the generation of used batteries.**
- **By the year 2010, to dispose 50 % of used batteries in a safe and environmentally sound manner and in conformity with the provisions of the Protocol and other agreed international provisions.**

Plan for the reduction by 20 % by 2010 of the generation of hazardous wastes from industrial installations for the Mediterranean region (adopted in 2003):

At present, it is necessary to make an evaluation of SAP-MED and regional plans implementation with the view to assess the state of the art and provide recommendations to address current and future challenges be considered in the current NAP update process 2014-2015.

The particular objective of this evaluation is to assess trends regarding hazardous waste since the elaboration of the regional plan, as well as the level of achievement of the reduction target by 20% by 2010 set by the Regional Plan.

2. Plan on Reduction of hazardous waste by 20% by 2010 (2003)

In order to assist the Mediterranean countries in the long-term implementation of the SAP MED, particularly in the formulation, adoption and implementation of National Actions Plans (NAPs), a three-year GEF Project “Determination of priority actions for the further elaboration and implementation of the Strategic Action Programme for the Mediterranean Sea” was implemented by MAP, and in particular by the MED POL Programme, the MAP Regional Activity Centres and WHO/EURO. The project consisted of numerous activities, which include, among others, the Plan for the reduction by 20% by 2010 of the generation of hazardous waste from industrial sources (adopted in 2003).

The main goal of the Regional Plan was the reduction by 20% by 2010 of the generation of hazardous waste from industrial installations in the MAP countries. In order to achieve this target, the total hazardous waste generation in the Mediterranean region was estimated, priority flows of hazardous wastes were identified and the required actions at regional and national level were proposed. Additionally, legal and management framework and current waste minimization practices were analyzed country by country.

The total amount of hazardous wastes generated by the MAP countries was estimated in the range of 19,558,500 tons per year. This figure results from the aggregation of the data associated to each of the 20 MAP countries. The information sources that were used were the following:

- Questionnaire to National Focal Points: data on types of wastes generated.
- Questionnaire to National Focal Points: data on industrial sectors generating hazardous wastes.
- MAP Hazardous waste inventory in the Mediterranean Region.
- European Environmental Agency hazardous waste inventory.
- European Topic Centre on Waste.
- Blue Plan: regional and national reports.
- National sources.

Table 1. Estimated hazardous waste generation in the MAP countries (t HW), per million of € of Industrial Gross Domestic Product.

<i>Country</i>	<i>t HW / y</i>	<i>M\$ GDP Ind</i>	<i>t HW/ M\$ GDP Ind</i>
Albania	5,000	1,121	4.46
Algeria	325,000	40,116	8.10
Bosnia-Herz.	8,000	1,461	5.48
Croatia	200,000	6,391	31.29
Cyprus	40,000	1,811	22.09
Egypt	160,000	33,612	4.76
France	9,000,000	337,206	26.69
Greece	290,000	29,475	9.84
Israel	325,000	44,030	7.38
Italy	3,500,000	315,757	11.08
Lebanon	100,000	3,625	27.59
Lybia	90,000	18,800	4.79
Malta	10,000	1,517	6.59
Monaco	500		
Morocco	125,000	10,636	11.75
Slovenia	30,000	6,930	4.33
Spain	5,000,000	170,607	29.31
Syria	75,000	5,313	14.12

Tunisia	75,000	5,752	13.04
Turkey	200,000	39,309	5.09

Despite the difficulties encountered in the collection of information from all the MAP countries, general trends in relation to hazardous waste generation were identified as follows:

- The estimated total amount of hazardous wastes generated by the 20 MAP countries is in the range of 20 millions of tonnes per year. The key contributors are the European Mediterranean countries, due to their major industrial development.
- Hazardous waste generation data has been reported both according to the type of waste generated, and to the industrial sector generating them. The main types of hazardous wastes in quantitative terms are the ones resulting from mining activities (18%), organic chemical processes industry (11%), mineral oils (10%) and surface treatment processes (9.5%).
- The analysis of reported data shows that the main industrial sectors generating hazardous wastes are the metal industry (as it includes several types of wastes), mining activities, and oil refining.
- The metal industry, oil refining activities and the textile industry are the industrial sectors identified as the main sources of pollution for the marine environment. The industrial concentration on the coastal zone is the main cause of their impact, particularly in southern countries

Flows of hazardous wastes with a major priority to be reduced are:

- The metal industry is the sector that is more commonly identified as a priority sector in most of the MAP countries, together with the chemical industry and oil refining activities.
- The priority types of wastes are used mineral oils and wastes from surface treatment.
- An industrial sector like mining, accounting for the second largest total generation of hazardous wastes, has only been found as a priority sector in a couple of countries.

Reduction of 20% of hazardous wastes is approached in this Plan as a relative target. This means that the target is aimed at reducing an overall 20% of the hazardous waste generation in relation to industrial activity. That is, tons of hazardous wastes per unit of industrial activity (in monetary units), or, in other words, reducing an overall 20% of the “Waste Generation Factor”. This has been considered to be the most reasonable approach in terms of pursuing the continuous improvement of the industrial sector in the Mediterranean Region. Potential reductions on hazardous waste generation can only be properly identified in each specific country, to take into consideration the different technological, legal and economic frameworks.

Proposals

In order to reduce 20% of hazardous wastes generation in the overall Mediterranean Region by 2010, this Regional Plan basically proposes the following approach:

- To reduce 20% of current Waste Generation Factors (tons of hazardous waste per unit of industrial activity), through the adoption of Cleaner Production techniques and Best Available Techniques.
- To achieve an overall target reduction of 20% through an equal allocation among MAP countries.
- To include the reduction target into National Plans, this will be elaborated in each MAP country.

Actions at national level are the key ones to effectively achieve a relative 20% overall reduction by 2010, and are proposed to be developed in the following way:

1. To undertake a National Diagnosis to better determine the current waste generation factor and priority flows of hazardous wastes to be reduced.
2. To ensure the development of a national strategy for hazardous waste management, that takes into account hazardous waste minimization.
3. Development of National Plans, taking into account, legal, social, technological and economic concerns, and incorporating the target to reduce 20% of the Waste Generation Factor.
4. To establish and promote a set of mechanisms to encourage the adoption of cleaner production actions leading to reduction of hazardous wastes: capacity building and dissemination of information, voluntary agreements, hazardous waste minimization plans, integrated pollution prevention control, economic instruments, etc.

3. Evaluation of hazardous waste in the Mediterranean region

The methodology followed for conducting the evaluation consisted of an exhaustive desk review of all the available data on hazardous waste in the Mediterranean region with the aim of identifying trends against Regional Plan's data 2002 (baseline). Due to the lack of reports on hazardous waste submitted by the Contracting Parties to the Secretariat of the Barcelona Convention, the following sources of information were consulted:

- Basel Convention country reports 2000-2013
- United Nations Statistics Division 1995-2009
- Eurostat 2004-2012

3.1. Basel Convention

Parties to the Basel Convention are required to transmit their national reports to the Secretariat pursuant to article 13, paragraph 3 in an annual basis.

All the Contracting Parties of the Barcelona Convention are also Parties of the Basel Convention; however, only nine Mediterranean countries periodically submit hazardous waste generation data to the Secretariat of the Basel Convention. Furthermore, available data through national reports¹ are not always comprehensive and, frequently, countries apply different scopes and/or methodologies.

Table 2 shows the total amount of hazardous wastes under Art. 1(1)a (Annex I: Y1-Y45) generated by countries in metric tons.

¹

<http://www.basel.int/Countries/NationalReporting/BaselConventionNationalReports/BC2013Reportsnbs;tabid/4266/Default.aspx>

Table 2. Hazardous waste generation under Art. 1(1)a (Annex I: Y1-Y45) reported by the MAP countries to Basel Convention Secretariat (metric tonnes).

	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Algeria			1,600	1,800	900	5,126	15,450	494	10,905	23,652	4,702	2,656	57,267	18,912
Bosnia & Herzegovina		1,830	6,295	7,094	6,560	6,660	4,447	4,981	3,145	4,870	2,252	3,710	4,986	3,917
Croatia	25,999	58,285	47,443	48,139	42,280	39,456	39,879	52,492	58,432	42,444	50,216	53,401	51,530	123,576
Cyprus		4,369						38,097	76,618	75,444	77,456	82,743	79,547	65,817
France ²					6,748,000		9,610,000		10,892,890					
Italy	3,911,016	4,279,233	4,991,000	5,419,150	5,348,844	5,906,000								9,372,184
Montenegro ³														
Morocco								150,000				256,000	262,000	300,000
Spain	3,293,705	3,222,853	3,222,853	3,222,853	3,181,738	3,112,187	3,228,248	3,143,407	2,783,688	2,880,335	2,952,822	2,991,152	3,113,947	

² Total amount of hazardous wastes under Art. 1(1)b generated

³ There are no regularly submission of data.

3.2. United Nations Statistics Division (UNSD/UNEP)

The environmental indicator on hazardous waste⁴ elaborated by the UNSD has been updated by March 2011 and has been elaborated based on the following sources:

- UNSD/UNEP Questionnaires on Environment Statistics, Waste section.
- Eurostat Environmental Data Centre on Waste
- OECD Environmental Data Compendium, Waste section.

Table 3. Hazardous waste generation in the MAP countries in 1,000 tons (UNSD/UNEP).

Country	1995	2003	2004	2005	2006	2007	2008	2009
Algeria	185.0	325.0	...	...	...	...	...	...
Bosnia and Herzegovina	...	...	...	...	...	...	91.8	...
Croatia	...	48.1	42.3	39.5	40.0	52.5	58.4	...
Cyprus	...	...	111.1	...	17.0	...	23.8	...
France	...	...	9 616.6	...	9 621.6	...	10 892.9	...
Greece	350.0	353.8	426.0	...	275.0	...	253.0	...
Israel	...	249.0	301.0	321.0	311.1	291.9	321.0	...
Italy	2 708.0	5 439.7	6 134.4	...	7 464.7	...	6 655.2	...
Malta	...	...	41.0	...	50.7	...	55.0	...
Monaco	0.3	0.8	0.6	0.5	0.5	0.6	0.7	0.4
Slovenia	...	...	107.9	...	116.4	...	152.7	...
Spain	...	3 222.9	3 116.0	...	4 028.2	...	3 648.6	...
Syrian Arab Republic	...	0.0	...	...	...	...	...	...
Turkey	...	...	997.6	...	10.8	...	1 024.0	...

3.3. Eurostat – waste statistics

The statistics office of the European Union provides with hazardous waste generation data regarding EU countries and other European countries.

Table 4. Hazardous waste generation in the EU Mediterranean countries in tonnes (Eurostat).

Country	2004	2006	2008	2010	2012
Bosnia and Herzegovina	:	:	:	:	945,923
Cyprus	111,117	16,961	23,786	37,311	31,288
France	8,764,275	8,888,747	10,892,900	11,538,134	11,303,137
Greece	425,971	274,954	252,955	291,773	297,370
Italy	6,134,449	7,464,670	6,655,155	8,543,415	9,474,449
Malta	44,105	51,012	55,267	24,856	29,326
Montenegro	:	:	:	:	2,840

⁴ <http://unstats.un.org/unsd/environment/hazardous.htm>

Slovenia	107,906	116,405	152,744	120,141	136,953
Spain	3,116,013	4,028,246	3,648,602	2,991,152	3,113,947
Turkey	997,579	10,796	1,018,283	3,226,051	3,988,200

4. Data analysis and major findings

An overview of the available data on hazardous waste generation in the Mediterranean region and baseline data from the Regional Plan (2002) is shown in **Table 5**.

Basel Convention, the UNSD and Eurostat have been consulted with the aim of identifying trends against the baseline data estimated by the Regional Plan and assess whether the 20% reduction target has been achieved at regional level.

Table 5. Overview of the data available on hazardous waste generation in the Mediterranean countries (in tonnes).

	RP on HW (baseline)	BASEL			UNSD/UNEP	Eurostat	
	2002	2008	2010	2012	2008	2010	2012
Albania	5,000						
Algeria	325,000	10,905	4,702	57,267			
Bosnia-Herz.	8,000	3,145	2,252	4,986	91,788		945,923
Croatia	200,000	58,432	50,216	51,530	58,432		
Cyprus	40,000	76,618	77,456	79,547	23,786	37 311.0	31 288.0
Egypt	160,000						
France	9,000,000	10,892,890			10,892,900	11,538,134	11,303,137
Greece	290,000				252,955	291,773	297,370
Israel	325,000				321,000		
Italy	3,500,000				6,655,155	8,543,415	9,474,449
Lebanon	100,000						
Libya	90,000						
Malta	10,000				55,027	24,856	29,326
Monaco	500				682		
Montenegro							2,840
Morocco	125,000			262,000			
Slovenia	30,000				152,744	120,141	136,953
Spain	5,000,000	2,783,688	2,952,822	3,113,947	3,648,602	2,991,152	3,113,947
Syria	75,000						
Tunisia	75,000						
Turkey	200,000				1,024,004	3,226,051	3,988,200
TOTAL MED	19,558,500	13,825,678	3,087,448	3,569,278	23,177,075	26,772,833	29,323,433

The analysis of hazardous waste data obtained from the different sources pending further consultation and verification by countries, leads to the following potential conclusions:

- No data regarding hazardous waste have been obtained since the development of the Regional Plan in 2002-03 for Albania, Egypt, Lebanon, Libya, Syria and Tunisia.
- Despite the lack of data, the total amount of hazardous waste estimated in 2003 for the Mediterranean region seems to have increased during the period 2003-2008. UNSD and Eurostat data for 2008, 2010 and 2012 show higher total amounts even though some country values are not available.
- As for countries, no reliable reduction trends have been identified, Only France and Cyprus show a reduction trend between 2010 and 2012 based on Eurostat data.
- EU countries and Turkey data seem quite consistent, however, differences between Basel Convention and Eurostat are detected due to different classification of hazardous waste.
- The generation of hazardous waste seems to have been underestimated by the Regional Plan for countries such as Italy, Malta, Slovenia and Turkey in view of the data provided by the available sources.
- On the other hand, the generation of hazardous seems to have been overestimated by the Regional Plan for Croatia and Spain in view of the data provided by the available sources.
- For Algeria and Bosnia, available data is contradictory between sources.
- There is a lack of a periodic reporting on hazardous waste by the Mediterranean countries, in particular, only 9 countries have recently reported to the Secretariat of Basel Convention. A lack of common/harmonized methodology and scope on the types/origins of hazardous waste applied by countries has also been identified.