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MEDITERRANEAN ACTION PLAN

Meeting of MAP National Focal Points

Athens, 6-10 May 1996

**PROGRESS REPORT BY THE COORDINATOR ON
THE IMPLEMENTATION OF ACTIVITIES CARRIED OUT SINCE
THE LAST ORDINARY MEETING OF THE CONTRACTING PARTIES**

(June 1995 - May 1996)

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INTRODUCTION

The present report covers the progress achieved and problems encountered in the implementation of the various activities carried out by the Coordinating Unit and its Regional Activity Centres (RACs) since the Ninth Ordinary Meeting of the Contracting Parties (Barcelona, 5-8 June 1995). Comments and factual corrections on the progress report should be transmitted in writing to the Secretariat at the beginning of the meeting.

A. IMPLEMENTATION OF THE BARCELONA CONVENTION

(i) Programme Coordination

(a) Decision Making Meetings

1. The reports of the Ninth Ordinary Meeting of the Contracting Parties (Barcelona, 5-8 June 1995) and the Final Act of the Conference of Plenipotentiaries on the Barcelona Convention and its Protocols (Barcelona, 9-10 June 1995) have been distributed in four languages to all Contracting Parties and relevant inter-governmental and non-governmental organisations (doc: UNEP(OCA)/MED IG.5/16, UNEP(OCA)/MED IG.6/7 and UNEP(OCA)/MED IG.6/8).
2. The Bureau of the Contracting Parties consisting of six members (Algeria, Egypt, Greece, Israel, Morocco, Spain) convened two meetings, the first in Rabat (9-10 November 1995) and the second in Cairo (1-2 April 1996). The Bureau reviewed progress achieved in the implementation of the various decisions of the Ninth Ordinary Meeting (Barcelona, June 1995) and the Conference of Plenipotentiaries and took the necessary decisions. The reports of the two meetings were issued and distributed to all Contracting Parties in documents UNEP/BUR/47/Rev.1 and UNEP/BUR/48/5 respectively.
3. As decided by the Ninth Ordinary Meeting of the Contracting Parties (Barcelona, June 1995), the Extraordinary Meeting of the Contracting Parties will be held in Montpellier, France, on 1-4 July 1996. The objective of the meeting is to review and approve the programme and budget for 1997 and tackle any other pertinent issues related to MAP including the approval of the Terms of Reference (TOR) of the Mediterranean Commission on Sustainable Development (MCSD).
4. A host Government Agreement is being negotiated between UNEP/MAP and the Government of France. The agreement specifies the responsibilities of each party in relation to the convening of the Extraordinary Meeting.

(b) Status of contributions to the Mediterranean Trust Fund (MTF)

1. During the month of November 1995, the EU finally paid its outstanding Voluntary Contribution. Therefore, all main contributors have paid their 1995 contributions. The unpaid pledges as at 31 December 1995 concerns mainly the outstanding contributions of the Government of

Libya for a total of US \$ 416,557 and the pledges for prior years of Yugoslavia for an amount of US \$469,975. Concerning Libya, the Coordinator has been in contact with Libyan authorities and some payments are expected.

2. Enclosed is Annex I and II which are respectively the status of Mediterranean Trust Fund contributions as at 31 December 1995 and the status of the Trust Fund as at 15 December 1995. The tables show a surplus of US \$1,563,979 as at the end of December 1995. This amount does not include the provision for the Revolving Fund which is indicated in the status as "operating reserve" for the amount of US \$1,788,700 as per the source of financing approved by the Contracting Parties during the last Ordinary Meeting.
3. At the beginning of 1996, the Secretariat decided, in view of the numerous activities that had to be undertaken during the first half of 1996, to allocate the above mentioned funds to activities. These include meetings such as the MEDPOL Coordinators meeting and MAP focal points meeting that had to be held during the first half of 1996.
4. In line with the decisions of the Contracting Parties, taken during their Eighth Ordinary Meeting in Antalya, concerning the use of the Revolving Fund, the US \$ 1,788,700 allocated under this Fund have been used to cover MAP salaries and operating costs for the first six months in 1996 pending the payment of the 1996 MTF contributions.

(c) Coordination meetings of MED UNIT/RACs on MAP programme

1. Two meetings of MED UNIT and the Regional Activity Centres (RAC), on MAP programme were convened in Athens on 25-27 September 1995 and in Rome on 16-18 January 1996 at the premises of the Environment Remote Sensing Centre (ERS/RAC).
2. The purpose of the meetings was to undertake an in depth consultation on the implementation of MAP Phase II, as well as to prepare concrete proposals for the programme budget for 1997. The reports of the meetings are contained in document UNEP(OCA)/MED WG.101/2 and UNEP(OCA)/MED WG.105/2.

(d) Euro-Mediterranean Cooperation

1. The Conference of Euro-Mediterranean Cooperation (Barcelona, 27-28 November 1995), stressed the strategic importance of the Mediterranean and the commitments of the participants to give their future relations a new dimension, based on comprehensive partnership.
2. Recognising the importance they attach to sustainable and balanced economic and social development with a view to creating a Mediterranean area of shared prosperity, the participants emphasised *inter alia*, regional cooperation and integration, substantial increase in EU financial assistance to its partners, and regional cooperation in the environment. In this regard, they confirmed their attachment to the

Barcelona Convention and the need for reinforcing coordination with MAP.

3. Moreover, they undertook to establish a short and medium-term priority environmental action programme for reconciling economic development with environmental protection, and integrating environmental concerns into the relevant aspects of economic policy.
4. The partnership agreements signed between EU and a few Mediterranean countries, are a concrete manifestation of the spirit and decisions of the Barcelona Conference, which would in the long run assist in securing development and stability in the Mediterranean region.
5. Furthermore, the Casablanca and Amman Conferences, as well as the expected Cairo Conference, are of importance in the efforts to establish an area of dialogue, cooperation and partnership.
6. In this regard, MAP with the necessary support of the Contracting Parties can and must play a role in these important and far reaching developments.

(e) Cooperation with the World Bank (METAP)

1. The consultation with the World Bank is continuing in a speedy way. The Coordinator participated in the Donors meeting organised by the WB in Luxembourg, on 7 December 1995, in preparation for the launching of the third phase of METAP (1996-2000) during the Ministerial launching Meeting to be held during the first half of 1996.
2. Three fields of cooperation between MAP and METAP were envisaged:
 - capacity building/arresting and prevention of pollution at hot spots/coastal areas management
3. Within the coastal areas management, it is envisaged that the World Bank and MAP will undertake an "Assessment of Coastal Zone Management Initiatives in the Mediterranean". The purpose of the review will entail a critical assessment of the quality and scope of individual initiatives and conditions associated with project success or failure. Draft Terms of Reference for the assessment are being negotiated by MAP and METAP. It is expected that the first phase of this collaboration will start very soon.
4. At its last meeting held in Cairo on 1-2 April 1996, the Bureau of the Contracting Parties recommended that the MAP/WB relation should be strengthened and be focussed on the three topics referred to above.

(f) Meeting of government-designated experts on the preparation of guidelines for the management of dredging spoils

1. The meeting will be held in Valencia, from 20 to 22 May 1996, with the

support of the government of Spain.

2. The Bureau of the Contracting Parties recommended the active participation of all Contracting Parties in the meeting.

(g) Meeting of technical experts on Toxic Reduction in the Mediterranean Sea

1. The Contracting Parties to the Barcelona Convention at their meeting in June 1995, adopted the Barcelona Resolution on the Environment and Sustainable Development in the Mediterranean Basin, in which they agreed to the reduction, by the year 2005, of discharges and emissions which could reach the marine environment, of substances which are toxic, persistent and liable to accumulate. They entrusted UNEP/MAP to organise a consultation with the various partners concerned to help design the programme of action to reach that goal.
2. The meeting will be hosted by France and it will take place in Marseille, on 2-4 October 1996. About 70 seminar-level technical experts from governments, industry, IGOs and NGOs will be invited.
3. The Bureau of the Contracting Parties recommended the active participation of the Contracting Parties in this meeting.

(h) Information and Training

1. The library which houses and manages a special collection of scientific and technical publications together with a complete collection of MAP-meetings documents, offered assistance and reference services to the MEDU staff and the Mediterranean scientific, professional and student community.
2. During the period of 1 June 1995 to 30 April 1996, 125 visitors were received and assisted in the library. Two-hundred and sixty-seven mail requests were filled for a total of 806 items. One-hundred and sixty-one issues of periodicals, 143 technical reports and 72 monographs were received, classified and processed. Compilation of the documents database (MEDDOC) continued. Volume III of Mediterranean Action Plan: List of Meetings and Documents, 1994-1995 was published. Compilation of the NGO database continued. The Directory of Non-Governmental Organisations: MAP Partners was published.
3. The following MAP Technical Reports were published: No. 92: *Assessment of the State of Pollution in the Mediterranean Sea by Carcinogenic, Mutagenic and Teratogenic Substances*; No. 93: *Epidemiological Studies Related to the Environmental Quality Criteria for Bathing Waters, Shellfish-Growing Waters and Edible Marine Organisms*; No. 94: *Proceedings of the Workshop on Application of Integrated Approach to the Development, Management and Use of Water Resources*; No. 95: *Common Measures for the Control of Pollution adopted by the Contracting Parties to the Convention for the*

Protection of the Mediterranean Sea against Pollution; No. 96: Final Report of Research Projects of Effects (Research Area III): Pollution effects on plankton composition and spatial distribution near the sewage outfall of Athens; and No. 97: Final Reports of Research Projects of Effects (Research Area III): Pollution effects on marine communities. They were sent to 452 individuals and institutions, MTS recipients. Fifty copies of each Report were sent to UNEP, Nairobi.

4. One Greek National was trained in Library-collection development, classification and management and in CDS/ISIS development and application.
5. At the request of WWF International (Athens office) assistance and consultation was given on library organisation and management, and one staff member, Greek National, was trained.

(ii) **Legal Framework**

(a) Status of MAP legal instruments

1. The Final Act of the Conference of Plenipotentiaries on the Convention for the Protection of the Mediterranean Sea against pollution and its protocols (Barcelona, 9-10 June 1995) was distributed in the four MAP languages to all Contracting Parties (UNEP(OCA)/MED IG.6/7). The Contracting Parties were requested to speed up the process of ratification to the new MAP legal instruments including the Offshore Protocol.
2. The document containing the statements and declarations of the Conference of Plenipotentiaries on the Convention and its Protocols (Barcelona, 9-10 June 1995) has been distributed as document UNEP(OCA)/MED IG.6/8.
3. A document on MAP Phase II and the Convention for the protection of the marine environment and the coastal region of the Mediterranean and its protocols, as approved in Barcelona last June, was published in English and French as an information document.
4. As at 29 February 1996, no Contracting Party has ratified any of the legal instruments approved in Barcelona last June. Syria and Slovenia have signed on 20 September 1995 and 10 October 1995 respectively the Offshore Protocol approved in Madrid on 14 October 1994, increasing the number of signatures to 11.
5. The status of Signatures and Ratifications of the Convention for the protection of the Mediterranean Sea against pollution and its protocols as at 29 February 1996 is attached as Annex III to this report.

(b) Conference of Plenipotentiaries on the amendments to the Protocol concerning Land-Based Sources of pollution (LBS Protocol)

1. The Meeting of the legal and technical experts and the Conference of Plenipotentiaries on the LBS Protocol were convened in Syracuse, Italy on 3-4 March and 6-7 March 1996 respectively, with the support of the Italian government and the Province of Syracuse. The legal and technical meeting examined all the amendments which had been proposed and agreed on a text which was submitted to the Conference for adoption and signature.
2. The Conference was attended by 17 Contracting Parties of which 14 signed the Final Act containing the adopted amendments (document UNEP(OCA)/MED IG.7/4). The report of the legal and technical meeting appears as document UNEP(OCA)/MED WG.107/4.

(c) Conference of Plenipotentiaries on the draft protocol on the Transboundary Movements of Hazardous Wastes and their Disposal in the Mediterranean (Hazardous Wastes Protocol)

1. As decided by the last meeting of the Bureau, a letter was sent on 27 December 1995 by H.E. Mr. Nouridine Benomar Alami, President of the Bureau to the Minister of the Environment of Turkey, expressing the views of the Bureau that the host government would ensure the unhindered participation of all Contracting Parties in MAP meetings to be convened in Izmir on the Hazardous Wastes Protocol, as well as to convene the meeting of experts as scheduled in Izmir, in order to look carefully into the draft protocol and to propose a final protocol with an added value. The Conference would then be convened later on the basis of the outcome of the expert meeting.
2. On 19 January 1996 a response was received from H.E. Mr. Hamdi Uçpinarlar, Minister of the Environment of Turkey, in which he confirmed that all the Contracting Parties will participate in the Izmir meetings without any hinderance and all participants will enjoy the privileges and immunities of the United Nations without exception, and requesting that the two meetings should be held as originally proposed.

In this connection a letter dated 1 February 1996 was sent from the President of the Bureau to the Minister of Agriculture, Natural Resources and the Environment of Cyprus.

3. When discussing this issue during its last meeting (Cairo, 1-2 April 1996), the Bureau of the Contracting Parties invited all Contracting Parties to abstain from political statements that are not relevant to MAP objectives.
4. The Secretariat is of the opinion that this issue has been settled in a positive and concrete manner. This is due to the good offices of the President of the Bureau and the cooperation of all parties.

5. With regard to the dates of the meetings on the hazardous wastes Protocol, the Secretariat has been in intensive consultation during the last few weeks with the members of the Bureau, Turkey and the European Union which resulted in an agreement on the following:

- a. convene the third meeting of the legal and technical experts in Izmir, Turkey, on 26 -28 September 1996;
- b. convene the Conference of Plenipotentiaries in Izmir, on 30 September - 1 October 1996.

(d) First meeting of legal and technical experts on the appropriate procedure for the determination of liability and compensation for damages from the pollution of the environment (Athens, 8-10 October 1996)

1. The development of a comprehensive regime for liability and compensation covering damages resulting from dangerous activities provided in the Protocols related to the Barcelona Convention, and also for means of prevention and reinstatement, becomes a necessity, especially in view of the recently completed amendment of the Barcelona Convention system. After all, the development of a liability regime is specifically required under Article 12 of the Barcelona Convention and Article 27 of the Offshore Protocol.

2. It is worth stressing that, apart from the rules of international law covering general issues of environmental protection, as may be applicable in the Mediterranean Sea, the question of liability of states and operators for environmental damage in the Mediterranean region remains unclear and difficult to establish. Of course, the Contracting Parties deal with liability and compensation issues within the framework of their own legal systems but the relevant pieces of legislation tend to vary in their standards of care and the bases of liability. A uniform approach is therefore required to rectify this situation, and in view of the absence of any rules and procedures covering liability for damages to the region, a comprehensive regime determining liability as part of the Barcelona Convention system should be established.

3. The development of a comprehensive liability regime for the Mediterranean region should contain the following elements:

First: it should provide a proper and adequate definition of what constitutes damage to the Mediterranean environment;

Second: it should safeguard, by providing narrowly defined defences for damages to the marine environment, that there are no loopholes that can be exploited by the Contracting Parties;

Third: it should strike an effective balance between a system of strict liability and the idiosyncrasies of the Mediterranean regional context, taking into account the need to protect the Mediterranean marine environment but also the need of development of the region;

Fourth: it should provide for the terms and conditions of the public access to information, effectively implementing, in this respect, the general provision established in the amended Barcelona Convention;

Fifth: it should provide for both the effective compensation for losses suffered as a result of conduct that causes damages, and for responsibility for cleaning up and restoration of the damaged environment and the dependent ecosystems.

4. The overriding consideration in establishing a liability regime for environmental damages in the Mediterranean region should be the securing of a balance between environmental protection and permitted uses. In order to be functional and practical it should be neither very stringent nor too liberal.
5. On the basis of these observations and taking into account the recent development of liability regimes in other international contexts, and in conformity with the decision of the Ninth Ordinary Meeting of the Contracting Parties (Barcelona, 5-8 June 1995), the Secretariat intends to convene the First Meeting of Legal and Technical Experts on Liability and Compensation from 8 to 10 October 1996 in Athens, so that the form and the substance of a liability regime for the Mediterranean region will be specifically formulated and proposed to the next meeting of the Contracting Parties.

(iii) Regional Activity Centre for Cleaner Production (CP/RAC)

1. At their Ninth Ordinary Meeting (Barcelona, 5-8 June 1995), the Contracting Parties "accepted the request by the Government of Spain that the Centro de Iniciativas para la Produccion Limpia of Barcelona become a Regional Activity Centre for Cleaner Production in the Mediterranean region under the umbrella of MAP. It noted that the Centre would be wholly financed by Spain, which undertook to provide detailed information concerning the Centre, to the Contracting Parties for their information, and to the forthcoming meeting of the Bureau for its consideration".
2. The last two meetings of the Bureau (Rabat, 9-10 November 1995 and Cairo, 1-2 April 1996) reviewed this subject. It should be noted that Spain has provided the Secretariat with information on the background, objectives, functions organizational, administrative and

financial matters. (Annex IV to this report).

3. During the exchange of views on this subject, the Vice-President of the Bureau from Greece informed the meeting of the Bureau on the decision of UNIDO to locate the regional Centre for Cleaner Production for the Mediterranean and Black Sea in Greece. In this connection a brief note entitled "Regional Cleaner Production Centre for the Mediterranean and Black Sea" was distributed by Greece during the meeting. The note appears as Annex V to this report.
4. During its meeting in Cairo (1-2 April 1996), the Bureau reviewed the issue and requested Spain to present to the meeting of the Contracting Parties a detailed programme of activities to be implemented by the CP/RAC during 1997. The Bureau also recommended that all regional and national centres for cleaner production should cooperate.
5. It should also be noted that a high level advisory regional seminar on cleaner production in the Mediterranean is planned to be held in Rome on 17 May 1996. The Seminar is being organized by the Italian NGO "ECOMED" in conjunction with UNEP/IE (Industry and Environment Office - Paris). The objectives of the Seminar are:
 - to determine the status of cleaner production implementation in the Mediterranean Region;
 - to draft an action plan, with concrete commitments and partnerships for regional cleaner production implementation;
 - to identify regional cleaner production issues for the UNEP/IE High Level Seminar on Cleaner Production (Oxford, United Kingdom, 23-26 September 1996).

(iv) Sustainable Development

- (a) Mediterranean Commission on Sustainable Development (MCSD)
 - On the basis of the comments made during the Rabat meeting of the Bureau (Rabat, 9-10 November 1995), the Secretariat has prepared a new paper containing the draft (original) text of the Terms of Reference of the Commission (TOR) and an alternative text. The new paper was sent to all Contracting Parties on November 1995 for their comments.
 - As at 31 March 1996, twelve replies were received (Croatia, Cyprus, Egypt, EU, France, Greece, Malta, Monaco, Morocco, Spain, Tunisia and Turkey). The Secretariat has prepared a document (UNEP/BUR/48/4) for the consideration of the meeting of the Bureau (Cairo, 1-2 April 1996). The document contains a synthesis and an analysis of the comments received and propose specific recommendations concerning the TOR and the date and place of the

first meeting of the Commission.

3. The Cairo meeting of the Bureau (1-2 April 1996) reviewed the Secretariat proposal and:
 - (i) took note of the general outline of the draft Terms of Reference and proposed a few guidelines relevant to the important issues contained in the draft Terms of Reference
 - (ii) requested the meeting of National Focal Points (Athens, 6-10 May 1996) to review and finalise the draft Terms of Reference on the basis of comments received from the Contracting Parties as well as those of the Secretariat and the few guidelines proposed by the Bureau.
 - (iii) decided to accept the offer of Morocco to host the first meeting of the Commission in the city of Fez during the month of December 1996.
 - (iv) requested the Extraordinary Meeting of the Contracting Parties (Montpellier, 1-4 July 1996) to consider and approve the final version of the draft Terms of Reference as well as the dates and venue of the first meeting of the Commission.
- (b) Mediterranean policy Workshop on Sustainable Development of Coastal Areas
 1. A Mediterranean Policy Workshop on Sustainable Development of Coastal Areas has been held in Santorini, Greece, on 26 and 27 April 1996 upon Greek/MAP initiative. France has also contributed to the expenses of the workshop. Invitations have been sent to all Contracting Parties and other relevant organisations and experts.
 2. The purpose of the policy Workshop was to exchange experience on practices, strategies and policy measures at the local, national, regional and international levels towards sustainable development of Mediterranean coastal areas. Background national reports were prepared by each participating country and a few key issue papers by invited experts formed the basis for the Workshop.
 3. The outcome of the Workshop of a preliminary set of guidelines for applying sustainable development policies in Mediterranean coastal areas, could be an important input to the Mediterranean Commission on Sustainable Development (MCSD) in its future work.
- (c) Seminar on the Management of Sustainable Development in the Mediterranean region (Malta, October 1996)
 1. The seminar is planned to assist the Contracting Parties to the Barcelona Convention in their effort to achieve sustainable development as a result of the deliberations of the Tunis Conference

(Tunis, 1 November 1994), the Ninth Ordinary Meeting of the Contracting Parties to the Barcelona Convention (Barcelona, 5-8 June 1995) and the Conference of Plenipotentiaries (Barcelona, 9-10 June 1995). In particular, the Seminar is expected to contribute to the work of the Mediterranean Commission on Sustainable Development.

2. The Seminar will focus on the practical application of the concept of sustainable development in the Mediterranean region, through Agenda 21, Agenda MED 21 and MAP Phase II. The emphasis will be on methodologies to incorporate sustainability into day-to-day decision making. In the course of the several interactive discussion sessions and the presentation of several experts an effort will be made to identify the major Mediterranean issues in view of the future work of the Commission for Sustainable Development.
3. Delegates from national governments of the Contracting Parties of the Barcelona Convention, selected invitees of the business community, research institutes and NGOs will be invited.

(d) Coastal Areas Management Programme (CAMP)

The following is a summary of the progress achieved so far in relation to the individual CAMP projects:

Rhodes Island (Greece)

1. All activities within this project have been completed, except the activity concerning "Historic Settlements", which is being finalized by the MAP Centre for historic sites (Marseille), and the activity on "Integrated Planning Study" which is the final report incorporating the results of all other activities. This activity is planned to be finalized by May 1996.
2. With a view to speeding up the finalization of the activities, two consultation meetings were convened at MAP premises (Athens) on 8-9 February and 28 February 1996, with the participation of a representative of the European Investment Bank (EIB) which finances this project.
3. A third consultation meeting was held in Athens, on 9-10 April 1996 with the objective of reviewing the second version of the Integrated Planning Study for the island of Rhodes.
4. It was agreed also to convene the final presentation Conference relevant to this project, in Rhodes on 14-15 May 1996. The objective is to present to the national and local authorities the final reports and results of the Rhodes CAMP project. With this Conference, the project will be considered as completed and closed. The possibility of a follow-up to a few activities will be discussed during the presentation Conference.

5. PAP/RAC has been involved in the implementation of a number of activities financed by EIB. The bulk of activities have been completed and discussed at the consultation meetings held in Athens in February 1996. In addition to PAP/RAC, the meeting was attended by the representatives of EIB, MAP, and the Greek authorities.
6. With regard to the activity on "Specially Protected Areas", the final report was finalised by SPA/RAC and was transmitted to the competent authorities.
7. A group of experts reviewed in detail the Integrated Planning Study of Rhodes, a document which incorporates all results arrived at through this CAMP, as well as those stemming from the activities financed by EIB. The meeting was held in March 1996.
8. Activity 7.14 "Specially Protected Areas". On the basis of the data collected during the different SPA/RAC missions to Rhodes and taking into account the views expressed by the local authorities, a report entitled "Guidelines for the Conservation of Nature and Natural Resources of the Island of Rhodes" was produced. The activity was completed with the preparation of the final report, which was transmitted to the competent authorities.

The Albanian Coast (Albania)

1. The training programme on GIS has been completed by PAP/RAC. Following the three PAP expert missions sent to Albania last year, three experts from the National Institute of Planning in Tirana attended an intensive course on GIS in Split in January 1996. During the course, they elaborated a number of practical applications which have been used in other CAMP activities, such as ICAM, carrying capacity analysis for tourism, and water resources management. The final report on GIS activities is being prepared.
2. The Coastal Area Management Plan for the Durrësi-Vlora Region has been completed in draft by PAP/RAC. This plan is a valuable contribution to the future efforts towards the development of this section of Albania's coast. The methodology of this plan has been brought into line with the methodology used in the preparation of plans for the remaining sections of the coast in which PAP/RAC also has a leading role. More than 20 Albanian and international experts participated in the preparation of the plan for the Durrësi-Vlora region. It contains a number of graphical annexes and a comprehensive database which may be a priceless help to those deciding on investment projects. The plan will be presented at a meeting on Presentation of Final results of CAMP Albania (2 May 1996) and Donors Conference (3 May 1996).
3. The work on the Water Resources Management Study for the Erzeni and Ishmi rivers has continued with the engagement of a large

number of Albanian experts who have proved very competent for the job. The report on the first phase of the study preparation (the first three chapters which contain basic data and information) will be published by PAP/RAC as a separate publication.

4. A training programme on EIA has been launched for Albanian experts. Through several missions and a training course, the experts of PAP/RAC will provide assistance to the local experts in making an EIA of a tourist accommodation complex on Ksamili Peninsula, in the southern part of the coast. The first mission of PAP/RAC experts visited in Albania from 25 February until 3 March 1996.
5. The preparation of the Carrying Capacity Assessment Study for the area of Lalzi Bay (the northern part of the coast) has started. Since considerable pressures are expected to take place on this extremely attractive section of Albania's coast, the Albanian authorities have decided first to determine what is the area's carrying capacity before taking any investment decision. This activity also includes a training of local experts. The first mission of two PAP/RAC experts took place at the end of March 1996.
6. Together with Dobbin Milus International, PAP/RAC completed the second phase of the Coastal Zone Management Project in Albania which is financed through the World Bank's METAP programme. The second phase of the project focused on the preparation of detailed proposals for three priority sites in the northern and southern part of the coast. This project enabled PAP/RAC to gain valuable experiences which will be used in the implementation of other CAMPs. The project's presentation will be in April 1996.
7. The final report of RAC/ERS activities including integrated cartography and satellite images at different scales (June-October) has been completed. Presentation to the CEP and other Albanian Organisms of the followed methodology and the achieved results as well as the main objectives pursued by RAC/ERS (November 1995); the meeting in Tirana was arranged by the Hydrometeorologic Institute - RAC/ERS' Albanian technical counterpart; the draft document was distributed on that occasion, in order to receive back comments and complementary information to prepare the final version which has been delivered in the framework of the Final Presentation Meeting held by MEDU in May; the database implemented during the RAC/ERS study (cartographic elements and image satellite) has been provided on this occasion and integrated into the GIS already implemented by PAP/RAC.

Following specific Albanian Authority requirements, evaluation of the implementation of a periodical monitoring of the whole adriatic coastline in Albania, using the same methodology, was made. In particular, RAC/ERS planned the best definition of the financial support necessary to allow the implementation of such a monitoring as well as the individuation of the potential donors (EC, Italian

Bilateral Cooperation).

8. A BP/RAC mission to Albania from 10 to 14 March 1996. Overall completion of BP activities is expected for June 1996.
9. Considering the context of Albania, the analysis has privileged the national level before giving specific attention to the "Tirana-Durres-Vlora triangle". Several local consultants were involved in this activity: data collection and analysis, future social, economic and political perspectives. The systemic and prospective analysis report, by an international consultant, was then reviewed, completed and presented to CEP.
10. Activity 7.2.4 "Specially Protected Areas and Implementation of the SPA Protocol" The final report of the activity is currently under preparation. A mission to Albania was accomplished in October 1995 by the expert in charge of the preparation of the report, and implied field visits to marine and coastal sites and meetings with the concerned authorities and experts. A preliminary version of the report has been sent for comments to the relevant national authorities and to the Albanian experts who participated in the Activity, and then discussed at a synthesis meeting held in Tirana on 21 December 1995. A version of the report revised on the basis of comments received was submitted to the relevant authorities. The final version is expected by April 1996.

Fuka-Matrouh (Egypt)

1. After having performed three missions in Marsa Matrouh and Alexandria (the last mission was in December 1995) and having organized a training course, PAP/RAC experts fulfilled the activities envisaged by the training programme on GIS. The Egyptian Environmental Affairs Agency, precisely its unit LUPEM, provided excellent conditions for the course, both with regard to hardware and software, and the quality of local and national trainees. Final report on this CAMP activity is under way.
2. PAP/RAC has donated two versions of ArcView 2.1 software: one to the Institute for Graduate Studies and Research, and the other to the Faculty of Agriculture of the University of Alexandria. This software was obtained owing to a long-time cooperation of PAP/RAC with UNITAR and ESRI (the software manufacturer).
3. PAP/RAC experts and a team of local and national experts started preparing practical GIS applications which will be used in the preparation of the coastal area management plan for the area Fuka-Matrouh, carrying capacity assessment study, soil erosion management study and EIA of a hotel complex.
4. The Acting Director of PAP/RAC and his associates met with the national coordinator for the activities of ICAM, CCA, and GIS in Split

on 23-24 January 1996 to discuss the coordination of work. A precise plan was agreed upon of all activities until the final conference envisaged in September 1996 when the results of the whole CAMP will be presented.

5. A document containing the workplan of activities included in the Coastal Area Management Plan of Fuka-Matrouh has been completed by the Egyptian experts. This document offers a precise definition of tasks, experts, deadlines, material resources, contents and other elements pertaining to the plan preparation.
6. Using the methods developed by PAP/RAC and FAO, the measuring of erosion processes on a pilot site in the area Fuka-Matrouh has been completed by the experts of the Faculty of Agriculture (University of Alexandria). The work was supervised by the experts of the University of Florence (Italy). The resulting document provides instructions as to how the pilot site should be managed and how negative effects of the erosion processes can be alleviated. All results of the measurement have been fed into GIS database.
7. The second phase of activities relative to the mitigation of consequences of erosion processes in the area of Fuka-Matrouh has been launched by the experts of the Faculty of Agriculture in Alexandria. The supervision is again entrusted to the experts of the University of Florence. A soil management study for the entire area will be prepared on the basis of results of activities carried out by PAP/RAC on the pilot site during 1995. The results of activities implemented by ERS/RAC, and other sources of information and analogous processes taking place elsewhere in the world will also be utilized. Within this activity a training course has been performed and a 3-dimensional digital model was created at the University of Florence, with the support of PAP/RAC, by an expert from the University of Alexandria.
8. Between December 1995 and January 1996, a formal agreement has been signed by the Alexandria University, the Coordinating Unit and by the RAC/ERS for the concerted completion of the field survey in the Fuka-Matrouh region planned for the validation of the satellite image and the production of the final Land Unit Map. The Egyptian team of experts, purposely appointed by RAC/ERS was in the field in January 1996 together with the team involved in the PAP/RAC activities for a mutual exchange of knowledge and expertise.
9. In February 1996, the RAC/ERS' expert and a PAP/RAC's consultant visited Alexandria to check the work carried-out by the surveyors in the field. Considering the strategic usefulness of the Land Unit Map to the accomplishment of the PAP/RAC work relevant to the management of the region, proper informal agreements have been reached between the two Centres for the integration of their mutual results. In this connection a consultation meeting was held in February between RAC/ERS and PAP/RAC with a view to

- coordinating activities. Afterwards the RAC/ERS' experts arranged a Mission to Alexandria in March for the final implementation of the work on the Land unit Map, jointly with the Egyptian team.
10. Overall completion of BP activities within this CAMP is expected for June 1996. A major report on "data collection and analysis" prepared by a local consultant was used as background information by an international consultant who prepared a systemic and prospective analysis report, which was then reviewed and completed by a team of local consultants in close cooperation with BP experts. The analysis was first done at national level with then, a zoom to the concerned region and mainly the impacts of the "capital" decisions on "Matrouh" future.
 11. Capacity building of some Egyptian experts through the arrangement of a training on-the-job in the field of remote sensing applications to the assessment of soil degradation, addressed to four local researchers from the University of Alexandria (June 1995).
 12. Participation to the First Presentation Meeting for the Fuka-Matrouh CAMP held in Marsa Matrouh, Egypt and presentation of the activities carried-out by RAC/ERS, which were greatly appreciated by the convened Authorities and consultants (18-20 September 1995).
 13. The ERS/RAC transferred a Landsat satellite image of the studied area to the University of Alexandria, Remote sensing laboratory of the Institute of Graduate Studies and Research (September 1995).
 14. Mission to Alexandria of RAC/ERS' expert for the final implementation of the work on the Land Unit Map, jointly with the Egyptian team and in integration with PAP/RAC (March-April 1996).
 15. Preparation of the final documentation and maps relevant to the activities carried out by RAC/ERS in the framework of the CAMP (May 1996).
 16. Activity 7.9 "Specially Protected Areas Protocol and Historic Sites (protection and management plan for historic and natural sites)"
SPA/RAC participated in the first presentation meeting for the Fuka-Matrouh CAMP held at Matrouh, from 18 to 20 September 1995. During the meeting the following main outputs were presented: (i) The marine ecosystem of the Fuka-Matrouh area (status of species and habitats); (ii) The terrestrial ecosystems of the Fuka-Matrouh area (status, protection and management measures); (iii) The cultural heritage in the Fuka-Matrouh area.
 17. It is expected that the final presentation meeting for the Fuka-Matrouh CAMP will be held in Matrouh during September 1996. With this meeting, the project will be completed.

Sfax (Tunisia)

1. A GIS training programme has been launched. Engaged in this activity together with PAP/RAC experts is an expert from the Blue Plan. PAP/RAC has secured computer equipment and relevant software. The second phase of the training programme was implemented in March 1996.
2. Preparation has been completed to start with the activities in the field of water resources management. A local coordinator has been designated, as well as the national team. Also, relevant Terms of Reference have been prepared. The first mission in Sfax is expected to be effectuated during the first half of 1996.
3. The analysis of the technical and scientific aspects of the planned work has been finally completed by ERS/RAC in November 1995 and a draft report has been prepared. SPA/RAC, as the coordinator for the CAMP for SFAX, has been made acquainted with the implementation of the RAC/ERS' intervention through the sending of a complete documentation about it.
4. The final report prepared by BP/RAC on "Analyse structurelle du système Sfaxien et identification des variables clés" has completed the phase of "knowledge" of BP intervention in this CAMP. Next phase "imagine" is under process with related work programme and larger team of local consultants will be involved.
5. Systemic and prospective tools for the coastal level are developed by BP through the CAMP activities. Such tools concern structural and matrix analysis, actors game, mappings, geo-statistics, GIS, Remote sensing, preparation and elaboration of scenarios. Considering the important necessary time investment, efforts have been concentrated on one CAMP, the Sfax case, to which those tools are more thoroughly applied. For other CAMPs, general principles of such tools are given due consideration without getting through details.
6. Several visits and working sessions were organised by BP with concerned ministry staff, experts and local consultants in Sophia Antipolis, Tunis and Sfax. The study of "Sfax structural analysis and identification of key parameters", has ended the "knowledge" of the system, whereas the second phase, "image", was completed by a study on "elaboration of evolution hypothesis and construction of three scenarios". Several local consultants were involved together with BP experts.
7. The period between June and December 1995 was devoted to the implementation of the RAC/ERS programme, following the gathering of the necessary data and information in Tunisia (May 1995).

The study has led to two main results:

- simulations of sea surface circulation in the Sfax channel, by using a numerical model, for some typical meteorological situations defined through one-year wind and tidal data as well as Sea Surface Temperature derived from NOAA satellite;
 - simulations of the distribution into the Sfax channel of some pollution materials (superficial) from two coastal point sources (Northern and Southern of Sfax), taking into account the outputs of the coastal sea circulation model, in order to understand the "dispersion capacity" and provide some information of the vulnerability of the coast;
 - the drawing up of the final report is planned by May 1996. A presentation to the Tunisian Authorities could be also scheduled, and agreed with the Coordinator of the Sfax CAMP.
 - contacts with the UNEP/GRID of Geneva, which has implemented a study in the same area, in collaboration with the LARSEN (ENIS, Sfax), have been established in order to further discuss and to merge mutual results.
8. Activity 7.7 "Aires spécialement protégées et protection des sites historiques: étude sur la protection, l'aménagement et la gestion de la zone de Thyna et étude sur la protection et la gestion de la médina de Sfax". A first part of the work was completed and consisted of a study of the ecosystems in the project zone, which was carried out by INSTM (Institut National des Sciences et Technologies de la Mer). The report of the study includes in particular a description of the marine and coastal ecosystems and an assessment of the main threats faced by the site. The report will serve as a basis for the drawing up of an action plan for the management of the Thyna Park.

Malta

1. PAP/RAC has been entrusted with the preparations for this CAMP, as well as with the general coordination of work relevant to this project. The Acting Director of PAP/RAC together with another expert visited Malta in February 1996 to identify the activities which should be included in the CAMP. Their reports will be used as the basis for the agreement which is expected to be co-signed by the Maltese Government and MAP in the first half of 1996.

Morocco

1. The First Officer of MAP paid a visit to Morocco on 19-25 November 1995 for the launching of the CAMP of Al-Hoceima. During this visit he had various consultations with the national (Rabat) and local (Al-Hoceima) authorities. A list of priority activities was agreed upon as

well as the steps to be taken in order to launch this CAMP.

2. On 24 October 1995, the ERS/RAC Director met in Rabat with the Director of the Ministry of the Environment. The approach that RAC/ERS intended to plan for the carrying out of its intervention in the Al-Hoceima area, was presented. It was also agreed that the use of the remote sensing for the observation and study of the vegetation could reveal itself useful for the overall comprehension of the state and development of the environmental concerns.

Israel

1. The Deputy Coordinator paid a visit to Israel in February 1996. The purpose of the visit was to discuss with the relevant authorities all issues related to the CAMP for Israel.
2. A draft outline of the Israel CAMP and its framework of activities was prepared and reviewed with the authorities and it was sent later to all MAP Centres for their comments.

Algeria

1. A mission is planned by BP/RAC, the Coordinator of this project, for early June 1996 to discuss the area proposed for CAMP and its objectives, and prepare the launching of the necessary feasibility study.

Lebanon

1. A MAP mission to Lebanon is being projected with a view to discussing the framework and the content of the project as well as the selected area to be designated by Lebanon for the project.

B. IMPLEMENTATION OF THE LAND-BASED SOURCES (LBS) PROTOCOL AND THE DUMPING PROTOCOL

(a) Land-based sources and dumping activities

1. The work on the preparation of the survey of pollutants from land-based sources in the Mediterranean, organized by WHO/UNEP, continued. After the 1994 evaluation of the submitted questionnaires which covered liquid domestic discharges, industrial pollutants and petroleum hydrocarbons, additional countries questionnaires were received later in 1995 and evaluated. A meeting on the evaluation of the survey took place in Athens in December 1995 and six participants attended it. Results of the survey were presented to the Meeting of National Coordinators for MED POL (Athens, 18-22 March 1996) and are presented to this meeting as document (UNEP(OCA)/MED WG.111/Inf.9).
2. A consultation on microbiological quality of coastal recreational and shellfish

growing waters organized by WHO/UNEP was held in Athens from 28 November to 2 December 1995 and was attended by 21 participants from 13 Mediterranean and one non-Mediterranean countries and the EU (Albania, Croatia, Cyprus, Greece, Israel, Italy, Libya, Malta, Morocco, Slovenia, Spain, Tunisia, Turkey, United Kingdom). The meeting focused on the problems related to the microbiological quality of coastal recreational and shellfish waters in the Mediterranean as well as on the microbiological pollution data submitted to the MED POL-Programme. The document on the Assessment of the State of Microbiological Pollution of the Mediterranean Sea as amended following discussions during the above consultation, was submitted to the MED POL Coordinators Meeting which was held in Athens from 18-22 March 1996. That meeting decided to postpone the decision on control measures until international developments in the field would clarify some problems. The document on the Assessment of the State of Microbiological Pollution of the Mediterranean Sea is submitted to this Meeting as UNEP(OCA)/MED WG.111/Inf.8.

3. The document on the Assessment of the State of Pollution of the Mediterranean Sea by Anionic Detergents was submitted for comments to the Joint Meeting of the Scientific and Technical Committee and the Socio-Economic Committee which took place in Athens from 3-8 April 1995. However, due to lack of time, the document was not discussed during the meeting and delegations were requested to provide comments to the Secretariat in writing for the improvement of the document. Comments received were incorporated in the present document which was submitted to the MED POL Coordinators Meeting which was held in Athens from 18-22 March 1996. The above document is submitted to this meeting as UNEP(OCA)/MED WG.111/Inf.4. The relevant recommendations are included in document UNEP(OCA)/MED WG.111/4.
4. The updated version of the Guidelines for submarine outfall structures for Mediterranean small and medium-sized coastal communities, prepared jointly by WHO and UNEP after integration and harmonization of the first comprehensive version with the later complementary guidelines was revised and submitted for comments to the Joint Meeting of the Scientific and Technical Committee and the Socio-Economic Committee which took place in Athens from 3-8 April 1995. However, due to lack of time, the document was not discussed during the meeting and delegations were requested to provide comments in writing to the Secretariat. Comments received were incorporated in the present document which was submitted to the MED POL Coordinators Meeting which was held in Athens from 18-22 March 1996. The above document is submitted to this meeting as document UNEP(OCA)/MED WG.111/Inf.6.
5. The updated version of the Guidelines for treatment of effluents prior to discharge into the Mediterranean Sea, prepared jointly by WHO and UNEP after integration and harmonization of the first comprehensive version with the later complementary guidelines was revised and submitted for comments to the Joint Meeting of the Scientific and Technical Committee and the Socio-Economic Committee which took place in Athens from 3-8 April 1995. However, due to lack of time, the document was not discussed

during the meeting and delegations were requested to provide comments in writing to the Secretariat. Comments received were incorporated in the present document which was submitted to the MED POL Coordinators Meeting which was held in Athens from 18-22 March 1996. The above document is submitted to this meeting as document UNEP(OCA)/MED WG.111/Inf.7.

6. The document on the Assessment of the State of Eutrophication in the Mediterranean Sea was submitted for comments to the Joint Meeting of the Scientific and Technical Committee and the Socio-Economic Committee which took place in Athens from 3-8 April 1995. It was specifically stressed that delegations should provide additional information relevant to their countries, especially as far as existing legal provisions are concerned. All comments received were incorporated in the new version which was presented to the meeting of National Coordinators for MED POL (Athens, 18-22 March 1996) and is presented to this meeting as document UNEP(OCA)/MED WG.111/Inf.5.
 7. A new version (document UNEP(OCA)/MED WG.89/Inf.3) of the assessment document on copper and zinc was submitted to the Joint Meeting of the Scientific and Technical Committee and Socio-Economic Committee which took place in Athens from 3-8 April 1995. The comments received were incorporated into the new version of the document that was presented to the meeting of National Coordinators for MED POL (Athens, 18-22 March 1996) and is submitted to the present meeting as document UNEP(OCA)/MED WG.111/Inf.3. The recommendations concerning the control of pollution from copper and zinc are included in document UNEP(OCA)/MED WG.111/4.
 8. The document on Guidelines for authorizations for the discharge of liquid wastes into the Mediterranean Sea prepared jointly by WHO and UNEP was reviewed and updated following recommendations and comments made during the past consultation meetings on this subject. The present document was submitted to the MED POL Coordinators Meeting which was held in Athens from 18-22 March 1996. The final version is submitted to this meeting as UNEP(OCA)/MED WG.111/Inf.10.
- (b) Monitoring and research activities (MED POL)**
9. During 1995 MED POL National Monitoring Programmes were finalized and signed by Albania, Croatia, Cyprus, Egypt, Greece, Israel, Lebanon, Morocco, Slovenia, Syria, Tunisia and Turkey for a total direct contribution of 540,000 US Dollars. Negotiations were held with Algeria and a programme is expected to be finalized in 1996. During 1995 the following countries reported monitoring results: Croatia, Greece, Italy and Morocco.
 10. The Meeting of MED POL Coordinators took place in Athens from 18 to 22 March 1996 attended by the Coordinators, or their representatives, of 16 countries. The Meeting examined the progress report on activities carried out in 1995 and agreed on a set of recommendations relevant to 1997 activities to be submitted to the MAP Focal Points' Meeting and

subsequently to the Contracting Parties for adoption. In particular, the meeting examined the draft proposal of the MED POL-Phase III Programme (1996-2005) which was approved after a number of amendments. The report of the Meeting is available as document UNEP(OCA)/MED WG.104/5. MED POL-Phase III Programme is submitted to this meeting for adoption as document UNEP(OCA)/MED WG.111/5

11. The project financed by the Italian Government concerning the processing, analysis and presentation of pollution data, which had started in July 1994, was completed in December 1995. The project worked on the computerization of the MED POL marine pollution data, its statistical and scientific analysis, the presentation of results and regional assessment (by use of enhanced hardware and software tools such as desktop publishing-DTP, geographic information systems-GIS, and multimedia). The final output of the project, i.e. a set of technical guidelines for the processing, analysis and presentation of marine pollution data, was presented to a training course on management, processing, analysis and presentation of marine pollution data held in Trieste from 11 to 16 December 1995. 24 scientists/managers from 16 Mediterranean countries attended the course.
12. The XXIX Inter-Agency Advisory Committee (IAAC) for MED POL was convened in Athens from 9 to 12 January 1996. It reviewed the work carried out in 1995 and planned in 1996 and it discussed a draft budget of MED POL for 1997. The report of the Meeting is available as document UNEP(OCA)/MED WG.103/3.
13. An on-the job training course on Data Quality Assurance was organized in Morocco (4-15 December 1995) for the determination of trace metals in marine environmental samples for MED POL. The training course was held at the Institute National D'Hygiène (INH) in Rabat and was attended by eight participants from six MED POL national Institutions. The course addressed various aspects of trace metals within MED POL from sampling, sample handling storage, preparation, analyses and data interpretation. Participants were also instructed on the implementation of Good Laboratory Practice. The effectiveness of the training course will be tested through the distribution of the next intercomparison sample. In fact, through the results which will be reported, it will be possible to assess their performance and concentrate future efforts accordingly.
14. The Third FAO/UNEP Sub-regional Workshop on the Monitoring of Chemical Contaminants in Marine Biota for Trends was organized at the University of Alexandria from 6-9 November 1995. Thirty Mediterranean scientists from Egypt, Cyprus, Israel and Libya benefitted from this course. The fourth and final workshop of this series took place in Rabat (26-29 February 1996) for participants from Algeria, Morocco and Tunisia and was attended by 23 participants.
15. Two National training course and intercalibration exercises on the determination of microbiological pollution in seawater was jointly convened by WHO and UNEP and the relevant national authorities. The first one was organized by the National Institute of Hygiene of Morocco in Rabat from 17-

22 September 1995. It was attended by 12 participants from different laboratories engaged in microbiological monitoring of seawater. The second one was organized by the Institute of Oceanography and Fisheries in Split, Croatia from 11-16 December 1995 and it was attended by 11 participants.

16. The pilot phase of the biomonitoring programme was initiated in January 1996. Eleven laboratories from 8 countries are now participating hoping that this number will increase in 1997.
17. The IOC/UNEP/WHO/FAO Training Course on Toxin Chemistry and Toxicology related to Harmful Algae was organized at the University of Trieste from 3-12 September 1995. Six Mediterranean scientists benefitted from this course.
18. The ICoD/UNEP/FAO/IOC Fourth Intensive Training Course on the Applications of Ecotoxicology in the Monitoring and Assessment of Marine Pollution in the Mediterranean was organized at the University of Genova from 11-22 September 1995. Five Mediterranean scientists were assisted to attend this course.
19. The Third meeting of the Task Team on Implications of Climate Change on the Albanian coastal region was held in Tirana (21-23 November 1995). The meeting reviewed the draft final report and agreed on the actions necessary to finalize the report. Final Report is currently being edited by the secretariat and it will be issued by the end of March 1996.
20. The work on the implications of climate change on the coastal areas was completed in the framework of CAMPs Fuka, Albania and Sfax. Relevant documents will be published by April 1996.
21. The book "Climatic Change and the Mediterranean", volume 2 (608 pages) was published by Arnold Publishers in December 1995. The book contains the work on five case studies (Rhodes Island, Kastela Bay, Maltese islands, Syrian Coast, and Cres-Losinj islands) and comparative analysis of 11 Mediterranean studies.

C. IMPLEMENTATION OF THE PROTOCOL CONCERNING COOPERATION IN COMBATING POLLUTION IN THE MEDITERRANEAN SEA BY OIL AND OTHER HARMFUL SUBSTANCES IN CASES OF EMERGENCY (EMERGENCY PROTOCOL)

(a) Prevention and combating pollution from ships (REMPEC)

Activities organised by REMPEC

(i) Implementation of the Protocol concerning cooperation in combating pollution in the Mediterranean Sea by oil and other harmful substances in cases of emergency

1. During the period under consideration (June 1995 - May 1996), the

Regional Marine Pollution Emergency Response Centre for the Mediterranean Sea (REMPEC), carried out activities aimed at improving and strengthening the regional system for cooperation and mutual assistance in cases of emergency and at increasing the levels of preparedness for and response to marine pollution accidents of individual coastal states. The activities concentrated on:

- A. information collection and distribution;
- B. capacity building;
- C. training;
- D. assistance in cases of emergency.

A. Development of the Regional Information System (RIS)

- 2. During June 1995 and May 1996 a total of four documents which form part of RIS were updated and distributed to REMPEC's official Focal Points as well as to a number of other interested parties within and outside the Region.

B. Capacity building/assistance to Countries in the Development of National Systems for Preparedness and Response and in the Development of Bilateral or Multilateral Operational Agreements (Subregional Contingency Plans)

- 3. The Centre gives priority to the development of national systems for preparedness and response, and to the adoption of subregional contingency plans. These areas constitute the main impetus of present and future actions of REMPEC.

(a) Assistance in developing national systems for preparedness and response

- 4. The Centre's activities are concentrated primarily on Albania, Lebanon, Libya and Syria. These coastal states are in the process of developing their own national systems.
- 5. Assistance to Albania in developing their national system for preparedness and response is provided under the CAMP for Albania. A seminar for decision-makers and government officials was organised in Tirana in February 1995. A training course for personnel in charge of command and coordination of response activities (on-scene commanders) is scheduled to take place in Albania in the second half of May 1996. An expert is expected to undertake a mission to Albania in 1996 to prepare a comprehensive project for assisting the Albanian National authorities in the preparation of the technical and operational parts of the national contingency plan as well as those related district and local plans.
- 6. In February 1995 an expert was sent to Lebanon to conduct a preliminary fact finding mission. On the basis of the recommendations contained in the report, a project for the development of a national system for preparedness and response to marine accidental pollution will be discussed with Lebanese

authorities in June this year at the occasion of a Seminar to the Lebanese authorities are organising.

7. Since 1992 REMPEC has been assisting Libyan authorities in the development of their national system. Between 23 and 25 September 1995, REMPEC, in cooperation with the Technical Centre for Environment Protection (TCEP), organised in Tripoli, a three day national Workshop for decision makers and government officials. REMPEC is planning to organise this year (tentative September 1996), a national training course for on-scene commanders.
8. This year, the Centre intends to initiate activities aimed at assisting the Syrian authorities in developing their national system for preparedness and response to marine accidental pollution. For this purpose, the Director of REMPEC will visit Syria in the latter half of this year, an expert will conduct a preliminary survey in June 1996 and a seminar for decision-makers and government officials is scheduled to be organised in December 1996 in Latakia. This seminar might be a joint seminar for Syria and Lebanon.

(b) Preparation of sensitivity maps

9. Within the framework of the CAMP for Sfax (Tunisia), a project for the preparation of sensitivity maps for the region of Sfax started in March 1996 and is expected to end in December 1996. As recommended by the last REMPEC Focal Points meeting, the methodology to be used for the production of sensitivity maps will be the one proposed for the preparation of an "Atlas of the Mediterranean Region for Preparedness and Response". This project is conducted in cooperation with: Ecole des Mines de Paris, IFREMER, CEDRE, and Ecole National d'Ingénieur de Sfax.

(c) Emergency Preparedness and response to maritime related accidents involving hazardous substances in port areas

10. REMPEC, according to its Medium Term Programme of Activities has been requested to assist the Mediterranean coastal states prepare for and respond to maritime related accidents involving hazardous substances in port areas by implementing a series of individual pilot projects. The goal behind this approach is that the projects would be used as a model for other recipients in the region.
11. Following the request put forward by Turkey and Morocco, two pilot projects have been prepared by REMPEC:
 - (i) one is related to a risk assessment study and associated capacity building for preparedness and response, for the port of Mersin, Turkey
 - (ii) the other one concerns the development of an emergency plan for the port of Tangier, Morocco.

These two projects will be financed by non MTF funds. On this topic

REMPEC cooperates with UNEP IE/PAC with the context of its APELL programme.

(d) Assistance in the development of bilateral or multilateral operational agreements (subregional contingency plans)

Cyprus, Egypt, Israel

12. The project for the development of a subregional system for combating major marine pollution incidents concerning Cyprus, Egypt and Israel, financed by the EU financing mechanism LIFE, started on 1 January 1993 and ended with the last activity planned under the project, the Fifth Meeting of the Steering Committee, held in Brussels from 7 to 8 December 1995.
13. The project produced the following outputs:
 - (i) three national reports containing *inter alia* recommendations for improving the national systems for preparedness and response to accidental marine pollution;
 - (ii) three estimates for additional equipment required for an effective response to oil spills by individual countries of 4000 tons (Cyprus and Israel) or 6000 tons (Egypt), and jointly to oil spills of up to 15000 tons;
 - (iii) a training programme comprising of proposals for national training courses, a subregional training course and a joint exercise, and
 - (iv) a subregional contingency plan.
14. The following activities were conducted under the project:
 - (i) five meetings of the Steering Committee (2 in Brussels, 1 in Egypt, 1 in Cyprus and 1 in Israel);
 - (ii) a mission of a team of consultants to the three countries (May/June 1993);
 - (iii) the drafting of a Subregional Contingency Plan;
 - (iv) a Meeting of a Working Group of National Experts (Nicosia, Cyprus, 8-10 November 1994);
 - (v) three National Training Courses on Accidental Marine Pollution Preparedness and Response for medium-level personnel (Cyprus, 13-17 March 1995, Israel, 19-23 March 1995, and Egypt, 26-30 March 1995);
 - (vi) a meeting for the signature of the Agreement on the Subregional Contingency Plan for preparedness and response to major marine pollution incidents in the Mediterranean (Barcelona, Spain, 9 June

1995);

- (vii) a Subregional Joint Training Course on Marine Pollution Emergency Management (Haifa, Israel 11-15 June 1995);
- (viii) a Subregional Joint Spill Response Exercise (Port Said, Egypt, 22-25 October 1995).

15. The results of the project are: the progressive improvement of the existing national systems for preparedness and response: the development of close cooperation between the three countries and the adoption of a Subregional Contingency Plan leading to the establishment of a system for cooperation in case of a major accident. As part of the whole process of building the Subregional System for combating major marine pollution incidents, the joint exercise organised with the deployment of equipment (vessels, helicopter, response equipment, response teams) from the three countries permitted to start testing the System.
16. The official REMPEC Focal Points of Cyprus, Egypt and Israel expressed their wish to undertake specific activities aimed at ensuring further development of the Subregional System for combating major marine pollution incidents. The Fifth Meeting of the Steering Committee held in Brussels, 7 and 8 December 1995, discussed and amended a draft project prepared by REMPEC. With a view to obtaining the financial assistance of the European Union and technical support of REMPEC, the three countries concerned jointly requested REMPEC to submit the present Project to the EU LIFE programme for approval.
17. A meeting of the competent national authorities of the Parties (Cyprus, Egypt and Israel) to the Subregional Contingency Plan is scheduled to take place in May this year in Cyprus.

Croatia, Italy, Slovenia

18. Discussions and preparatory works are still going on for the preparation of a project leading to the development of a Subregional system for combating major marine pollution incidents in the North Adriatic (Croatia, Italy, Slovenia).
- (e) **Cooperation between governments and the industry concerning preparedness and response to marine pollution incidents**
19. On 27 December 1995 the Centre participated in an exercise on exchange of information organised by the chemical industry within the framework of the ICE (International Chemical Environment) programme. Two meetings with CEFIC took place with the view to discuss progress in cooperation between the chemical industry and REMPEC.
 20. The Mediterranean Oil Industry Group (MOIG) created in October 1994 on the occasion of the REMPEC Focal Points Meeting, will have its second meeting in Istanbul, 8-10 May 1996. The first meeting of the MOIG took

place in Rome, 19-20 April 1995. The purpose of these meetings is to discuss and agree on cooperation between industry and governments aimed at improving oil spill preparedness and response at the national and regional level.

C. TRAINING

21. From 6 October to 14 October 1995, REMPEC in cooperation with the Black Sea Environment Programme Coordinating Unit and with the assistance of the Ministry of Environment of Turkey, and the Turkish Marine Environment Protection Association (TURMEPA), organised in Istanbul, Turkey, the Joint Regional Training Course on preparedness for and response to marine pollution incidents involving oil and other hazardous substances in the Mediterranean and the Black Sea, MEDIPOL '95. The course was held in Istanbul, following a kind invitation put forward by the Turkish national authorities. The total number of participants who attended MEDIPOL '95 was 44.
22. MEDIPOL '95 was the first training course in accidental marine pollution preparedness and response organised for participants from two regional sea areas and it was the first significant joint activity between the MAP and the Black Sea Environment Programme. It gave an opportunity to professionals from the two regions to exchange their views and mutually benefit from their different experiences.
23. Direct voluntary contribution of the Government of Turkey, as the host country, to the organisation of the course was essential for the smooth running and final success of the course. The support provided by TURMEPA was also very helpful.
24. The planned REMPEC training programme for 1996 includes:
 - (i) a regional training course on crisis management:
 - (ii) a regional training course on spill preparedness and response for supervisors/on-scene commanders.

It is the intention of REMPEC to make use of the training course material prepared as part of the IMO model courses on marine pollution preparedness and response currently being developed by the OPRC Working Group of MEPC.

D. COOPERATION AND MUTUAL ASSISTANCE IN CASE OF EMERGENCY

(a) Communication and exercises

25. The Centre contributed to the design of a simulated field exercise (chemical/oil) organised by the Italian authorities in October 1995.
26. In the framework of the European Community Information System, a

communication exercise ECOMEX '96 will be organised in May 1996 with Greece playing the role of the affected country.

(b) Assistance in case of emergency

27. No major accident occurred in the Mediterranean region during the period under consideration. However several maritime incidents happened which in some cases required REMPEC, on request of the concerned countries to provide information and advice.
28. The next meeting of the Focal Points of REMPEC is scheduled to be organised from 21 to 26 October 1996 in Malta.

D. ENVIRONMENTALLY SOUND MANAGEMENT OF THE MEDITERRANEAN COASTAL ZONE

(a) Observation and Systemic and Prospective analysis of Environment and Development in the Mediterranean (BP/RAC)

I. Systemic and prospective activities

Mediterranean level

1. The major reference study, of the Blue Plan, " Futures for the Mediterranean Basin ", published first in 1989, needs to be updated, reviewed and complemented, taking into account new factors and evolutions in and for the Mediterranean region and countries. This has been tackled through a study of "The implication of a sustainable development approach in the Mediterranean and the preparation of a long term strategy with related catalysing programme of activities till the year 2000".
2. A survey about Mediterranean agriculture, focusing on intensification of agriculture and its ecological and economical consequences, has been conducted. It will be used as background information for further study on " Mediterranean agro-systems and impacts on environment ".
3. The Blue Plan fascicules series has been enriched by a ninth one on " Transport et Environnement en Méditerranée ". Considering the importance of this series, despite its non-availability in English, preparation of next ones on " Natural hazards " and "Agriculture " has been launched, publication is expected in June 1997 and June 1998.

II. Mediterranean Environment and Development Observatory - MEDO

Cooperation:

4. For the preparation of the third phase of METAP, BP/RAC was asked to develop environment monitoring and performance indicators that will then assist countries in improving management of their national strategies and METAP projects. During the next 1996-2000 METAP programme of activities, it is expected that BP/RAC will be

entrusted the implementation of the regional component on " Program Performance Indicators and Milestones ".

5. Two major studies were prepared on:

- Identification of a first set of regional indicators and
- Identification of performance milestones for some priority environmental areas in Mediterranean countries.

Both studies were done in view of improving the development of environmental monitoring indicators and strengthening the establishment of regional environmental monitoring network.

6. On behalf of MAP and METAP, a major international workshop on " Environmental Performance Indicators " was organised in Damascus (see under Capacity Building and Communication).
7. As a result of the Barcelona Euro-Mediterranean Cooperation Conference, Eurostat of the EC has launched a Mediterranean Statistics programme. BP/RAC has been asked to take care of the environment statistics component. Status, needs and capacity building requirements have been studied. BP/RAC expects to be associated to Eurostat 1996-2001 programme on Mediterranean environmental statistics.

National Observatories:

8. Recognizing the importance of its " Observatoire Tunisien pour l'Environnement et le Développement Durable - OTEDD ", the Ministry of Environment and the ANPE have nominated a full-time director, appointed some staff and provided specific offices. BP/RAC provides assistance in advising activities implementation, providing information, identifying consultants, preparing Terms of Reference (TOR) and reviewing studies.
9. Turkish Environment and Development Observatory - TEDO " has been launched with a major support from the EC-DGXI-LIFE, after a close cooperation between BP/RAC and the Ministry of Environment for the preparation of the project document and the approach of the potential funding agencies. TEDO will be established in close cooperation with the State Institute of Statistics and the State Planning Organisation, together with MEDO of MAP-BP/RAC. Necessary technical assistance will be provided according to BP/RAC expertise and means.
10. Project document for the Albanian Observatory has been prepared and potential funding agencies have been approached : EC, UNDP and METAP mainly.
11. Discussions are under process for the preparation of Egyptian and Lebanese Observatories in cooperation with regional international organisation (CEDARE, etc..) and national institutions (national cooperating agencies and concerned ministries).

Development of Indicators:

12. Considering the importance of the indicators as monitoring, evaluation, management and decision-making tools, BP/RAC has given major importance to the identification and elaboration of environment, development and sustainable development indicators. Related conceptual and methodological activities are based on existing international research, adapting their results to Mediterranean context and priorities, through Agenda 21, Agenda MED 21 and MAP Phase II. This activity is being strengthened through cooperation with and support from METAP.
13. Following studies were conducted (at various stage of completion) on:
 - Indicators for soil quality and use in sustainable development;
 - Indicators for vegetation cover and forest in sustainable development;
 - Air pollution : data and indicators;
 - Indicators on water economy, resources and uses, jointly with the Sahar and Sahel Observatory;
 - Indicators for a Mediterranean Sustainable Agriculture.
14. Mediterranean countries are being consulted on the various sets of indicators elaborated by BP/RAC prior to the organisation of an international workshop (fourth quarter of 1996) on Mediterranean Environment and Sustainable Development Indicators to validate the final selection and promote their use by concerned international, regional and national decision makers.
15. For the sets of indicators, BP/RAC is privileging, for the time being, the widely accepted Pressure-State-Response (PSR) framework of indicators as developed by OECD. Later on, and if necessary, adjustments and improvements will be done, so as to correspond better to more specific Mediterranean context.

Thematic studies:

16. Considering the importance of water, quantity and quality, in the Mediterranean basin and for the Mediterranean people, and considering the stock of knowledge and expertise available in the BP/RAC, priority was given to the study of this major natural environment component. Meanwhile, knowledge and expertise on other components (soil, air, water, etc..) are being cumulated for further similar more complete and in depth studies. A study on Mediterranean coastal erosion and MEDO activities was prepared.
17. Water studies concern the following:
 - Means of monitoring the quality of inland waters and preventive actions;
 - Who is doing what in water management in the Mediterranean countries in cooperation with EC/IPTS;
 - Water resources and uses in the Mediterranean region : situation and evolution in figures;
 - Groundwaters in the Mediterranean region;

- Water resources and wetlands in the Mediterranean region jointly with MEDWET.

Institutional Studies :

18. The series of Mediterranean Country Profiles on Institutions-Environment-Development covers three additional countries, Morocco, France and Egypt. Compared to the first ones (Turkey, Albania, Tunisia), new sections on key environmental issues, research - education and NGOs were considered.
19. The comparative analysis of environmental institutions in the Mediterranean countries is being enlarged and deepened through review of methodological approaches. decentralisation and regionalisation forms, legislative framework, awareness and perception of environmental issues (private, public, NGOs) and international cooperation. A comprehensive report is expected during the second half of 1996.

Mediterranean Environment and Development Information System (MEDIS)

20. In order to respond more efficiently to systemic/prospective analysis and indicators/thematic observatory studies, the BP information system has been organised more adequately, preparing itself for easier exchange of information with other RACs of MAP. Considering the importance of geo-referenced data for environment and sustainable development studies, the GIS tool has been improved. Regional administrative boundaries for several countries and watershed limits have been digitalised. To a certain extent and for some specific cases, remote sensing technique and results are used.
21. Data base is being continuously updated and enriched, mainly at the occasion of fascicules preparation (tourism and transport) and major thematic studies (water). An inventory of sources of environmental and socio-economic data in most of East and South Mediterranean countries have been conducted in close cooperation with Eurostat.
22. To facilitate communication with national and international partners, BP/RAC has been connected to Internet, and a BP internet home page was proposed for Medgate project.
23. Reasonable investments and important efforts were devoted to the improvement of the output quality, mainly for the CAMP prospective approaches. the maps for the Country Profiles and the graphic and geographic representation of indicators.

III. Capacity Building and Communication

24. A major METAP - MAP - BP/RAC International Workshop on " Environmental Performance Indicators " was organised in Damascus from 10 to 14 January 1996. It was attended by the MAP Coordinator and by some 50 people from 13 Mediterranean countries and 10 international organisations. In addition to related documents prepared by BP/RAC, some of the best available documents on indicators were given to the participants. To increase participation, interactivity and usefulness. half of the time was devoted to small group sessions on concepts and

various types of indicators.

25. During the implementation of BP/RAC CAMP activities, several working and training sessions were conducted to inform and sensitize Mediterranean experts from Tunisia, Egypt and Albania on the identification of key parameters and their interactions through a structural matrix, the identification of major hypothesis and their combinations as background to scenarios elaboration.
26. BP/RAC has actively participated in several meetings for preparation of METAP III, mainly as responsible for the performance indicators component.
27. BP/RAC has actively contributed to the Mediterranean Environment Statistics component, in close cooperation with EC/Eurostat (task force, workshops).
28. BP/RAC has actively participated in several international meetings concerning Mediterranean environment and sustainable development. Several articles and notes were published, in addition to documents and books listed above. Publication of the fascicle is expected for the next Contracting Parties meeting in Montpellier.

(b) Coastal planning and management (Priority Actions Programme - PAP/RAC)

Integrated Planning and Management of the Mediterranean Coastal Areas

1. A one-week training course on the application of GIS in integrated management of coastal areas was organized in Nicosia (Cyprus) in December 1995. The purpose of the course was to present the experience of PAP as well as positive experiences of other international institutions and organizations. It was held in the offices of the National Remote Sensing Organisation. In addition to 4 lecturers, the training course was attended by 10 participants from several institutions and ministries. PAP/RAC prepared for the purpose a complete training module which may be used, with minor modifications, in other countries of the Mediterranean too.
2. PAP/RAC issued "Guidelines for Integrated coastal and Marine Areas with Special Emphasis on the Mediterranean Basin" in French and Croatian. The latter was published with the financial support of the Croatian Government. The French version of the document will be used by OCA/PAC and disseminated to all interested Mediterranean countries.
3. "Guidelines for Carrying Capacity Assessment for Tourism Areas" was also completed. Even while it was in a draft form, the document aroused quite an interest. It is now being distributed to all interested Mediterranean countries, institutions and individuals. It summarized the experiences of PAP/RAC in the implementation of the CCA method. It will also be of use in the preparation of a training module.
4. "Classification System for the Evaluation of the Coastal Strip" was completed in a draft form and tested on the case of Brac Island (Croatia). The document is a valuable contribution to the practical implementation of ICAM in the Mediterranean. It should be underlined that the document succeeded in simplifying the comparatively complicated techniques for decision support in ICAM, making them more accessible to the experts directly involved in coastal area management.

5. Preparations were made for the organization of a training course in Croatia on Arc View 2.1. It is a very friendly software which enables the use GIS database. The special onus of the course will be on the use of that software in ICAM. The course is planned for April 1996.
6. PAP/RAC established excellent contacts with the World Bank's METAP programme, as well as with EU, EIB and UNDP. Among others, PAP/RAC took part in the preparation of Terms of Reference for the evaluation of Mediterranean experiences relative to coastal zone management.

Environmental Impact Assessment

7. A national training course on the implementation of EIA was held in Homs (Syria) in November 1995. The course was attended by 19 experts and two lecturers recruited by PAP/RAC. It was found very successful, so that the national authorities requested PAP/RAC to examine the possibility to organize a similar course in Aleppo during 1996.
8. Preparations have been made for national training courses on EIA in Albania and Croatia. It is planned to organize both courses in the first half of 1996.

Solid and Liquid Waste Management

9. Preparations for a regional workshop on solid waste management are under way. All training documents have been completed. The venue of the workshop and other details are still to be determined. The workshop had been offered for hosting to Turkey. However, as no response was received, the hosting was then offered to Croatia and accepted in principle. There is a possibility to organize a field trip in the neighbouring Slovenia in order to see a solid waste landfill site. The workshop is planned for the first half of 1996.

Water Resources Management

10. Together with the Water Services Corporation, Institute of Water Technology of Malta. PAP/RAC organized a Training Course (Malta, 28 November - 2 December) on Integrated Approach to Water Resources Planning, Management and Use. The course was attended by 20 participants from 15 Mediterranean countries. This event is a result of a longtime cooperation of PAP/RAC and relevant Maltese institutions in the field of water resources management.
11. On 27 November 1995, there was a meeting of experts (authors) held in Malta to discuss the progress of Guidelines for Integrated Approach to Water Resources Planning, Management and Use. The document is about to be completed in draft and ready for a review.
12. Proceedings of the Workshop on Integrated Water Resources Planning, Management and Use which was held in Marseille in November 1994 have been recently published as MAP Technical Report Series No. 94.

Aquaculture

13. From 1 to 4 November 1995, there was a regional workshop held in Iraklion (Greece) dealing with the selection and protection of sites suitable for aquaculture. The workshop was co-organized by PAP/RAC, IFREMER (France) and Institute of Marine Biology of Crete. It was attended by 21 participants from 12 Mediterranean countries, Ukraine and Bulgaria, as well as FAO. The workshop took note of the presented national reports and discussed the state of the art in this particular field. Furthermore, the participants discussed, suggested minor changes, and accepted draft guidelines on siting the aquaculture activities.
14. Guidelines for the selection and protection of sites suitable for aquaculture in the Mediterranean are completed in draft which will soon be distributed for comment to all interested Mediterranean countries.
15. PAP/RAC has continued to coordinate the EAM network. Within its framework, a PAP/RAC expert participated in the meeting held in Messolonghi (Greece) in February 1996 which discussed the lagoonal aquaculture management.

Soil Erosion

16. The Turkish report which will be contained as annex to the Guidelines for Measurement of Erosion Processes in Mediterranean Coastal Areas has been completed.
17. Guidelines for the Application of a Common Consolidated Methodology of Mapping of Rainfall-Induced Erosion Processes in the Mediterranean Coastal Areas have been completed in draft. This document will be presented and discussed at a regional workshop to be organized, together with FAO and ICONA (Spain) in Barcelona in the second half of 1996.
18. An expert meeting to define Terms of Reference for the preparation of Guidelines for Measurement of Erosion Processes was organized by PAP/RAC in Madrid on 7-8 November 1995. The guidelines are being prepared in cooperation with FAO.
19. Terms of Reference have been drafted for the mapping of erosion processes in the region of Valcebre in Spain. The job has been entrusted to the experts of the University of Murcia.
20. A meeting of authors drafting the Guidelines on mapping the erosion processes in the Mediterranean was held in Rome on 22-23 January 1996. The meeting took place in the offices of FAO whose experts are members of the team preparing the Guidelines.

OTHER ACTIVITIES

General Coordination

21. PAP/RAC is continuing to improve the flow of information. An effort to this end is Compendium of PAP Technical Reports and Studies published in English, French and Croatian and distributed to all National Focal Points and many institutions and

individuals.

22. On many occasions, the Acting Director and other experts of PAP/RAC have been invited by various international organizations and institutions to present their experiences or to take part in the creation of programmes for integrated management of coastal areas and other priority actions. Their presentations have been received with great interest in Ljubljana, Naples, Sofia, Damascus, Malta, etc.
23. PAP/RAC has continued to assist OCA/PAC in the implementation of activities on integrated coastal and marine areas management within the Regional Seas Programme.
24. Cooperation of PAP/RAC with the Croatian Government, other authorities and institutions has been excellent. Croatia fulfilled all its obligations to the Centre for 1995. This enabled some improvements to be made in the office building to enhance work efficiency (air conditioning system, more office room by partitioning, better office equipment, etc.) and communication (e-mail).
25. The Government of Croatia adopted the decision on establishing a National Governing Board for PAP/RAC thereby completing the legislative procedure which regulates the status of PAP Centre in Croatia.
26. As to the problems encountered, it should be pointed out that the Host Country Agreement between the Government of Croatia and UNEP has not yet been signed. The Croatian Government has submitted its comments on the draft agreement to UNEP which needs now to examine the possibility for signing the agreement as soon as possible.

(c) Environment remote sensing (RAC/ERS)

General

1. During the period between June 1995 and May 1996, RAC/ERS has continued to carry out its activities according to the objectives and the recommendations defined in the First Meeting of RAC/ERS Focal Points in September 1994, and adopted by the Ninth Ordinary Meeting, Barcelona, June 1995.
2. Since the RAC/ERS mainly aims at promoting the applications of remote sensing for the Observation and Study of the Environmental State and Changes, the interventions of the Centre in the framework of CAMPs and other projects at regional scale, are focussed on the capacity building of Mediterranean countries in this field, as well as on the achievements of concrete and cost effective results, by relying on this technique.
3. This period has also been useful to RAC/ERS to establish several contacts with organisations and institutions, at European and international level, competent in remote-sensing techniques and their environmental applications, through participation at meetings, seminars and scientific workshops. On those occasions, RAC/ERS has had also the opportunity to emphasise the strategic role of MAP/UNEP for the Mediterranean environment, its present and future objectives, the general and specific programmes as well as the operational structure of the

plan itself.

4. A brief description of the progress achieved during this year, relevant to the various RAC/ERS activities, is reported hereinafter.

Regional Projects

RAIS Project

5. The collection of questionnaires from the Remote Sensing Centres in the Mediterranean, relevant to their activities, technical equipment and professional staff, went on and is continuously in progress;
6. In February 1996 an up-to-date report relevant to the project progress was produced.

DAPHNE Project

7. June-December 1995: accomplishment of the first phase of the DAPHNE project for the classification and multitemporal observation of vegetation in all the Mediterranean coastal states. It concerned the multitemporal analysis of daily NOAA-AVHRR satellite images from November 1992 to October 1993, on the basis of which 40 different classes have been found, each of them characterised by a particular vegetation dynamics, mainly due to different phenological and productive patterns.
8. The drawing-up of the final report is planned by April 1996. It will be distributed to all the Mediterranean coastal countries through the RAC/ERS Focal points for information, remarks and suggestions. Moreover, digital data relevant to the achieved classification in specific areas will be provided to each country.
9. RAC/ERS has started looking for the setting up of synergies all over the Mediterranean area, for the validation of the classification made.
10. A meeting with FAO was arranged by RAC/ERS on 20 October 1995, in order to present the actual results and discuss the possibility of connection with the FAO Forest Action Plan. On that occasion, there was a useful exchange of views among a representative of the Remote-sensing division of FAO, a representative of the Blue Plan/RAC, and RAC/ERS experts, about the Mediterranean Forest Action Plan and MAP Phase II relevant to "Forest and Plant Coverage". The need of shortly convening another meeting with the development of forestry actions has been jointly agreed.
11. Last February, 1996, the RAC/ERS held a meeting at the JRC (Ispra, Italy) with some Officers of the Centre and of the ORSTOM (French Institution), to find potential synergies with European programmes which the DAPHNE project could be integrated to and to consider the possibility to develop joint actions.
12. Previous contacts with the UNEP/GRID of Geneva have been established in connection with the EC FIRS Project for "Forest Information from Remote Sensing", in order to integrate RAC/ERS results in the database managed by this body.

Other activities

Meetings and conferences

13. Apart from the participation in June 1995 at the Barcelona meetings, and at the different RACs meetings in Athens, September 1995, and in Rome, January 1996, RAC/ERS took part in different national and international conferences:
14. RAC/ERS participated in the workshop on "Space Technology and Remote Sensing Techniques for Sustainable Development in and around the Mediterranean" organised by EURSY in Madrid, Spain in June 1995. Presentation of the objectives and first results of the DAPHNE project;
15. The Centre participated in the workshop '95 on "Space Remote Sensing for Environment and Development", organised by MARISY in Rabat, Morocco in October 1995. The RAC/ERS intervention was focussed on the "Urban Management and the environment in the Mediterranean countries";
16. The Centre participated in the AIT conference Italian Association of Remote Sensing in Italy (Turin), held in October 1995, and presentation of the RAC/ERS programme in the framework of the Albania CAMP: "Monitoraggio dell'evoluzione di una zona costiera mediante telerilevamento da satellite: Albania centrale (area della laguna di Karavasia)";
17. The Centre participated in Oceanology International '96 in Brighton, U.K. during March 1996, and presented the "Monitoring of Coastline Changes through the use of Remote Sensing";
18. ERS participated in ERS Thematic workshop on pollution monitoring in the Mediterranean organised by ESA during March 1996. Following a formal request of MEDU, RAC/ERS will participate in the meeting with an intervention relevant to "The Mediterranean Action Plan initiative for the Protection of the Mediterranean Sea from Oil Pollution";
19. ERS participated in the Symposium on "Integrated Applications for Risk Assessment and Disaster Prevention for the Mediterranean" held in Malta during May 1996 with the presentation of "The Role of the UNEP/MAP Regional Activity Centre for Environment Remote Sensing in the Mediterranean".
20. In February 1996, a meeting with EU DGXII - Space Unit - and DGXI was held in order to consider the opportunity to have access to the European Union funding of the IV Framework Programme to develop activities recommended to the RAC/ERS by the Contracting Parties, on the occasion of the last Barcelona conference in June 1995.
21. In the framework of the Protocol of Cooperation S & T Italy-Egypt, Programme 1994-1997, the Italian Ministry of Foreign Affairs has granted to a researcher at the Institute for Graduate Studies and Research of the University of Alexandria, a three month fellowship at CTM RAC/ERS on thematic areas of interest for the researcher and jointly agreed with her Egyptian tutor and will be in the field of remote-sensing studies and applications.

E. IMPLEMENTATION OF THE PROTOCOL CONCERNING SPECIALLY PROTECTED AREAS (SPA)

(a) Specially Protected Areas (SPA/RAC)

Assistance to countries in the selection, establishment and management of specially protected areas

1. A feasibility study on the establishment or extension of SPAs on marine and coastal sites on the Algerian coast was completed. The study concerned the following sites: the Marais de la Macta, the Habibas islands, the El Kala National Park, the Chenoua terrestrial and marine park, the Gouraya National Park and the Taza National Park.
2. Upon a request of the Tunisian NFP, SPA/RAC supported and participated in a field mission on the Galite Archipelago from 18 to 22 August 1995. A report was produced highlighting the main recorded threats and proposing measures to reinforce the control and to improve the management of the marine reserve.

Implementation of the Action Plan for the management of the Mediterranean Monk Seals.

3. A survey of the southern coasts of Croatia aimed at checking the current presence of the monk seal in this region and registering habitats favourable to the species was carried out. The study was organised by SPA/RAC in agreement with the State Directorate for the Environment of Croatia and in collaboration with the Hellenic Society for the Protection of the Environment and Cultural heritage (Elliniki Etairia). A field mission was carried out by a group of national and international experts in October and November 1995. The mission received financial support from the Greek Ministry of the Environment and a contribution from the ERB (Environmental Research Bureau). The mission produced a report which was transmitted to the competent Croatian authorities.
4. A scientific document on the biology and present status of the Mediterranean Monk Seal has been finalised, and is expected to be published in two versions (English and French) by March 1996. The document has been prepared by the National Park of Port-Cros at the request of the SPA/RAC.
5. As the first edition of the Action Plan went out of print, SPA/RAC produced a new edition, in the form of a brochure in three languages (English, French and Arabic).

Implementation of the Action Plan for the Conservation of Mediterranean Marine Turtles

6. SPA/RAC organised in collaboration with WWF, MEDASSET (Mediterranean Association to Save the Sea Turtle), the Marine Biology Research Centre (Tajura) and the Technical Centre for Environment Protection (Tripoli), a survey of the Libyan coasts between Syrte and the Egyptian border, with a view to identifying possible sea turtle nesting sites. A field mission was carried out from 19 June to 5 July 1995 by a team of Libyan researchers and French and Tunisian experts. The study succeeded in discovering important nesting sites of the Loggerhead turtle

Caretta caretta. The report of the survey has been received by SPA/RAC from the experts in charge with its preparation in French. The report has been translated into English and circulated to the sponsoring organisations for comments and clearance. The final version is expected to be finalised by April 1996. Consultations with the Libyan authorities are under way with a view to organising a presentation meeting in Tripoli, during which some follow-up initiatives for the protection of the identified nesting areas are expected to be discussed.

7. Within the framework of a coordinated marine turtle tagging project launched by SPA/RAC, a manual on marine turtle tagging techniques is under preparation. A first draft prepared by the consultant in charge with the preparation of the manual has been sent by SPA/RAC to several renowned specialists on the subject for revision. The received comments have been transmitted to the author for consideration. The manual is expected to be published in two versions (English and French) by June 1996.
8. As the first edition of the Action Plan went out of print SPA/RAC produced a new edition, in the form of a brochure in three languages (English, French and Arabic).

Implementation of the Action Plan for the conservation of cetaceans in the Mediterranean

9. The establishment of a photoidentification database of fin whale specimens observed in the Mediterranean is in progress. A first set of images concerning about 250 specimens is being processed and included in the base by the Tethys Research Institute; a first operational version of the database is expected to be finalised by March 1996.
10. A directory of Mediterranean specialists on marine mammals has been prepared in collaboration with the Tethys Research Institute. The directory is expected to be presented at the Third Meeting of the National Focal Points (Tunisia, 25-27 March 1996).

Conservation of other species and ecosystems

11. Within the framework of a feasibility study for the setting up of a monitoring network for marine vegetation in the Mediterranean, a workshop aiming to examine the results of a questionnaire and to propose a common methodology for the monitoring of marine vegetation in the Mediterranean was held in Tunis from 2 to 3 November 1995, and involved 22 experts from 15 participating Mediterranean countries. On the basis of the results of the workshop, the feasibility study has been finalised.
12. A database of legal texts relating to the protection of threatened species in the Mediterranean riparian countries, prepared in collaboration with IUCN/Environmental Law Centre, has been established.
13. A meeting of experts on threatened species in the Mediterranean was held in Montpellier, France, from 22 to 25 October 1995. The main aims of the meeting were: (i) to assess the state of species and their conservation in the Mediterranean countries, (ii) to compile a list of endangered or threatened species in the

Mediterranean (iii) to compile a list of species whose exploitation must be regulated; (iv) to identify means and action aimed at developing Mediterranean countries' national capabilities in the field of conservation of species and facilitating the exchange of information between Mediterranean specialists. The meeting was organised in collaboration with the Council of Europe (Secretariat of the Bern Convention) and the Maison de l'Environnement de Montpellier. The meeting succeeded in drawing up the two lists mentioned in items (ii) and (iii) above, which will be proposed for adoption as annexes to the new Protocol concerning specially protected areas and biological diversity in the Mediterranean. It also issued a series of recommendations to the Contracting Parties.

14. A feasibility study concerning the preparation of national inventories of species and sites of special natural value is expected to be started by April 1996. SPA/RAC is in the process of defining the terms of reference of the study and selecting the experts/organisations that will take part in it.

Training activities

15. In collaboration with the Turkish Ministry of the Environment, SPA/RAC organised a theoretical and practical training session on the conservation of sea turtles. The course was held in Dalyan, Turkey, from 24 to 29 July 1995. A part of the session was devoted to a marine turtle tagging programme in the Mediterranean launched by SPA/RAC. Nineteen trainees from 9 Mediterranean countries took part. English was used as the working language.
16. SPA/RAC sponsored the participation of two trainees from Israel and Tunisia at a training course on turtle conservation which was held in Lara, Cyprus, from 28 July to 8 August 1995. The course was organised by the Department of Fisheries of Cyprus and by the Cyprus Wildlife Society.
17. In the framework of a training programme on marine vegetation, a session was organised in Tunis from 30 October to 4 November 1995 and was devoted to meadow ecosystems in the Mediterranean. The participants (a total of 11), were for the most part specialists with prior training in the field of marine vegetation. The aim of the session was to improve their knowledge by approaching specific subjects on the basis of the most recent knowledge in the domain. The working languages for this course were English and French with simultaneous translation during the lectures.
18. A training session on the management of protected areas in the Mediterranean region intended for English-speaking participants was held in Trieste, Italy, from 4 to 9 December 1995. The session was organised in collaboration with the Natural Marine Reserve of Miramare (Italy), and had the financial support of WWF Italy and the Commune of Staranzano (Italy). Fourteen trainees from 12 Mediterranean countries participated in the session.
19. Upon requests received from the Tunisian and Turkish NFPs, SPA/RAC sponsored the participation of 2 candidates from Tunisia and Turkey in a training course on Mediterranean cetology, which was held in Sète, from 26 February to 2 March 1996). The course was organised by the University of Montpellier.

Other activities

SPA/RAC is currently organising the following two meetings:

20. Meeting of experts on common criteria for the choice of protected marine and coastal areas that could be included in the SPAMI List (Tunis, 22-23 March 1996). The meeting is aimed at the preparation of the above criteria, to be proposed to the Contracting Parties for adoption as an annex to the Protocol concerning Specially Protected Areas and Biological Diversity in the Mediterranean (Barcelona, 1995).
21. Third meeting of the National Focal Points for Specially Protected Areas (Tunis, 25-27 March 1996).
22. SPA/RAC is collaborating with the MAP Coordinating Unit in the negotiation with the World Bank and WWF for the establishment of a regional biodiversity project/fund in the Mediterranean. To this end, SPA/RAC participated in the MEDPAN Meeting that was held at the Tour du Valat from 6 to 7 July 1995, and contributed to the revision of the different proposals that were elaborated.

ANNEX I

REGIONAL TRUST FUND FOR THE PROTECTION OF THE
MEDITERRANEAN SEA AGAINST POLLUTION

Status of Contributions as at 31 December 1995
(in United States Dollars)

COUNTRIES	Unpaid pledges as at 31 Dec. 1994	Adjustments for prior years	Pledges for 1995	Collections during 1994 for 1994 and ful. years	Collections during 1995 for prior years	Collections in 1995 for 1995 & ful. years	Unpaid pledges for prior years	Unpaid pledges for 1995
Albania	5,525.00	0.00	2,830	0	0	0	5,525	2,830
Algeria	0.00	0.00	42,446	0	0	42,446	0	0
Bosnia Herzegovina	12,128.00	0.00	12,128	0	0	0	12,128	12,128
Croatia	0.00	0.00	39,212	0	0	0	0	39,212
Cyprus	0.00	0.00	5,660	0	0	5,660	0	0
Egypt	19,808.00	0.00	19,808	0	19,808	19,808	0	0
France	0.00	0.00	1,534,937	0	0	1,534,937	0	0
Greece	0.00	0.00	113,594	136,406	0	0	0	(22,812)
Israel	0.00	0.00	59,425	0	0	59,425	0	0
Italy	3,559,933.00	0.00	1,268,132	0	3,559,933	1,268,132	0	0
Lebanon	0.00	0.00	2,830	0	0	0	0	2,830
Libyan Arab Jamahiriya	336,920.00	0.00	79,637	0	0	0	336,920	79,637
Malta	0.00	0.00	2,830	2,830	0	2,830	0	(2,830)
Morocco	0.00	0.00	2,830	0	0	2,830	0	0
Slovenia	0.00	0.00	11,319	0	0	0	0	11,319
Spain	27,085.00	0.00	27,085	0	27,085	27,085	0	0
Syrian Arab L Republic	0.00	0.00	605,971	0	0	605,971	0	0
Tunisia	11,319.00	0.00	11,319	0	0	0	11,319	11,319
Turkey	60.00	0.00	8,489	0	60	8,429	0	60
Yugoslavia	0.00	0.00	90,956	0	0	90,956	0	0
European Commissio	469,975.00	0.00	0	0	0	0	469,975	0
Total	0.00	0.00	101,063	0	0	101,063	0	0
EC Additional Contribution	4,442,753.00	0.00	4,042,501	139,236	3,606,886	3,769,572	835,867	133,693
Total	0.00	0.00	568,984	0	0	568,984	0	0
Total	4,442,753.00	0.00	4,011,485	139,236	3,606,886	4,338,556	835,867	133,693

Total collections during 1995 as at 31 December 1995: USD 7,945,442.00.

ANNEX II

TRUST FUND FOR THE PROTECTION OF THE MEDITERRANEAN SEA AGAINST
POLLUTION STATUS AS AT
12/15/95

	U.S.\$
<u>FUNDS AVAILABLE</u>	
Balance available as at 01.01.1994	818,759
Contributions received in 1994/95	12,632,961
Interest accrued in 1994/95	198,214
GROSS FUNDS AVAILABLE ON THE TRUST FUND AS AT 12/15/95	13,649,935
LESS OPERATING RESERVE	(1,788,700)
A. TOTAL FUNDS AVAILABLE ON TRUST FUND (NET OF OPERATING RESERVE) AS AT 12/15/95	11,861,235
<u>ALLOCATIONS:</u>	
1994/95 allocation issued by the Executive Director	12,911,999
<u>APPROVED COMMITMENTS:</u>	
Approved commitments for 1994/95	9,143,616
Approved provisions for programme support costs for 1994/95	1,188,670
B. TOTAL APPROVED 1994/95 COMMITMENTS/PROVISIONS	10,332,286
C. BALANCE AVAILABLE (A - B)	1,528,949
<u>PROPOSED COMMITMENTS:</u>	
Proposed commitments for 1994/95	(31,000)
Proposed provisions for programme support costs for 1994/95	(4,030)
D. TOTAL PROPOSED COMMITMENTS/PROVISIONS AS AT 12/15/95	(35,030)

ANNEX III

STATUS OF SIGNATURES AND RATIFICATIONS OF THE CONVENTION FOR THE PROTECTION OF THE MEDITERRANEAN SEA AGAINST POLLUTION AND ITS RELATED PROTOCOLS Status as at 29 February 1996

	Convention ^{1/}			Dumping ^{2/}			Emergency ^{3/}			Land-based Sources ^{4/}			Specially Prot. Areas ^{5/}			Offshore ^{6/}		
	Sign/re	Ratification	Sign/re	Ratification	Sign/re	Ratification	Sign/re	Ratification	Sign/re	Ratification	Sign/re	Ratification	Sign/re	Ratification	Sign/re	Ratification	Sign/re	Ratification
Albania	-	30.5.90/AC	-	30.5.90/AC	-	30.5.90/AC	-	30.5.90/AC	-	30.5.90/AC	-	30.5.90/AC	-	30.5.90/AC	-	-	-	-
Algeria	-	16.2.81/AC	-	16.3.81/AC	-	16.3.81/AC	-	16.3.81/AC	-	2.5.83/AC	-	2.5.83/AC	-	16.5.85/AC	-	-	-	-
Bosnia & HerzVina [*]	-	22.10.94/AC	-	22.10.94/AC	-	22.10.94/AC	-	22.10.94/AC	-	22.10.94/AC	-	22.10.94/AC	-	22.10.94/AC	-	-	-	-
Croatia [*]	-	12.10.93/AC	-	12.10.93/AC	-	12.10.93/AC	-	12.10.93/AC	-	12.10.93/AC	-	12.10.93/AC	-	12.10.93/AC	-	14.10.94	-	-
Cyprus	16.2.76	19.11.79	16.2.76	19.11.79	16.2.76	19.11.79	16.2.76	19.11.79	16.2.76	28.6.88/AC	17.5.80	28.6.88/AC	-	28.6.88/AC	-	14.10.94	-	-
European Community	13.9.76	16.3.78/AP	13.9.76	16.3.78/AP	13.9.76	12.8.81/AP	13.9.76	12.8.81/AP	17.5.80	7.10.83/AP	17.5.80	7.10.83/AP	30.3.83	30.6.84/AP	-	-	-	-
Egypt	16.2.76	24.8.78/AP	16.2.76	24.8.78/AP	16.2.76	24.8.78/AC	16.2.76	24.8.78/AC	-	18.5.83/AC	-	18.5.83/AC	16.2.83	8.7.83	-	-	-	-
France	16.2.76	11.3.78/AP-R	16.2.76	11.3.78/AP-R	16.2.76	11.3.78/AP-R	16.2.76	11.3.78/AP-R	17.5.80	13.7.82/AP-R	17.5.80	13.7.82/AP-R	3.4.82	2.9.86/AP-R	-	-	-	-
Greece	16.2.76	3.1.79	11.2.77	3.1.79	16.2.76	3.1.79	16.2.76	3.1.79	17.5.80	26.1.87	17.5.80	26.1.87	3.4.82	26.1.87	14.10.94	-	-	-
Israel	16.2.76	3.3.78	16.2.76	1.3.84	16.2.76	3.3.78	16.2.76	3.3.78	17.5.80	21.2.91	17.5.80	21.2.91	3.4.82	28.10.87	14.10.94	-	-	-
Italy	16.2.76	3.2.79	16.2.76	3.2.79	16.2.76	3.2.79	16.2.76	3.2.79	17.5.80	4.7.85	17.5.80	4.7.85	3.4.82	4.7.85	14.10.94	-	-	-
Lebanon	16.2.76	8.11.77/AC	16.2.76	8.11.77/AC	16.2.76	8.11.77/AC	16.2.76	8.11.77/AC	17.5.80	1994/AC [*]	17.5.80	1994/AC [*]	-	1994/AC [*]	-	-	-	-
Libya	31.1.77	31.1.79	31.1.77	31.1.79	31.1.77	31.1.79	31.1.77	31.1.79	17.5.80	6.6.89/AP	17.5.80	6.6.89/AP	-	6.6.89/AP	-	-	-	-
Malta	16.2.76	30.12.77	16.2.76	30.12.77	16.2.76	30.12.77	16.2.76	30.12.77	17.5.80	2.3.89	17.5.80	2.3.89	3.4.82	11.1.88	14.10.94	-	-	-
Monaco	16.2.76	20.9.77	16.2.76	20.9.77	16.2.76	20.9.77	16.2.76	20.9.77	17.5.80	12.1.83	17.5.80	12.1.83	3.4.82	29.5.89/R	14.10.94	-	-	-
Morocco	16.2.76	15.1.80	16.2.76	15.1.80	16.2.76	15.1.80	16.2.76	15.1.80	17.5.80	9.2.87	17.5.80	9.2.87	2.4.83	22.6.90	-	-	-	-

	Convention ^{1/}		Dumping ^{2/}		Emergency ^{3/}		Land-based Sources ^{4/}		Specially Prot. Areas ^{5/}		Offshore ^{6/}	
	Sign/re	Ratification	Sign/re	Ratification	Sign/re	Ratification	Sign/re	Ratification	Sign/re	Ratification	Sign/re	Ratification
Slovenia	-	15.3.94/AC	-	15.3.94/AC	-	15.3.94/AC	-	15.3.94/AC	-	15.3.94/AC	10.10.95	-
Spain	16.2.76	17.12.76	16.2.76	17.12.76	16.2.76	17.12.76	17.5.80	6.6.84	3.4.82	22.12.87	14.10.94	-
Syria	-	26.12.78/AC-R	-	26.12.78/AC	-	26.12.78/AC	-	1.12.93/AC	-	11.9.92/AC	20.09.95	-
Tunisia	25.5.76	30.7.77	25.5.76	30.7.77	25.5.76	30.7.77	17.5.80	29.10.81	3.4.82	26.5.83/R	14.10.94	-
Turkey	16.2.76	6.4.81	16.2.76	6.4.81	16.2.76	6.4.81	-	21.2.83/AC	-	6.11.86/AC-R	-	-

* Pending confirmation from the depositary state (Spain)

1/

Convention for the Protection of the Mediterranean Sea against Pollution

Adopted (Barcelona): 16 February 1976

Entry into force:

12 February 1978

2/

The Protocol for the Prevention of Pollution of the Mediterranean Sea by Dumping from Ships and Aircraft

Adopted (Barcelona): 16 February 1976

Entry into force:

12 February 1978

3/

The Protocol concerning Co-operation in Combating Pollution of the Mediterranean Sea by Oil and other Harmful Substances in cases of Emergency

Adopted (Barcelona): 16 February 1976

Entry into force:

12 February 1978

4/

The Protocol for the protection of the Mediterranean Sea against Pollution from Land-based Sources

Adopted (Athens): 17 May 1980

Entry into force:

17 June 1983

5/

The Protocol concerning Mediterranean Specially Protected Areas

Adopted (Geneva): 3 April 1982

Entry into force :

23 March 1986

6/

Protocol for the Protection of the Mediterranean Sea against Pollution resulting from Exploration and Exploitation of the Continental Shelf and the Seabed and its Subsoil

Adopted (Madrid): 14 October 1994

Entry into force:

Accession: AC Approval: AP Reservation: R

ANNEX IV

**INFORMATION ON THE REGIONAL ACTIVITY CENTRE
FOR CLEANER PRODUCTION**

Submitted by Spain



Centre d'Iniciatives per a la Producció Neta
Centro de Iniciativas para la Producción Limpia
Centre for Clean Production Initiatives
Centre d'Initiatives pour la Production Propre



Ministerio de Obras Públicas, Transportes
y Medio Ambiente
Secretaría de Estado de Medio Ambiente
y Vivienda



Generalitat de Catalunya
Departament de Medi Ambient
Centre d'Iniciatives per a la
Producció Neta

THE CENTRE FOR CLEAN PRODUCTION INITIATIVES

(Barcelona)

Original: Spanish



THE CENTRE FOR CLEAN PRODUCTION INITIATIVES (Barcelona)

1. BACKGROUND

In February 1995 the Government of Spain approved a National Plan for Hazardous Waste, covering the 1995-2000 period encompassing, and in certain cases supplementing, the hazardous waste management plans and programmes established by the Autonomous Communities of Spain. The Generalitat de Catalunya (the Autonomous Government of Catalonia), in turn, approved its own Programme for the Management of Hazardous Waste.

The Ministry of Public Works, Transport and the Environment (MOPTMA) and the Department of the Environment of the Generalitat de Catalunya, signed an agreement to establish the basic conditions which were to govern their joint financing of action aimed at achieving the goals set in the Plan.

One of the priorities established by the Plan is the prevention and reduction at the source of all waste generated and the fostering of cleaner, more environmentally friendly techniques. To achieve this both parties decided to collaborate in promoting the best available techniques through the **Centre for Clean Production Initiatives (CCPI)** and to such end signed a Cooperation Agreement. Under the terms of the Agreement CCPI is also to engage in activities of national and international scope.

In July 1994 CCPI started to operate as a result of the Programme for the Management of Hazardous Waste established by the Department of the Environment of the Generalitat de Catalunya. The Programme recommended a joining of forces with a view to minimizing the generation of such hazardous waste. Such forces were to include all the different levels of the administration, the industrial sectors, NGO's and the world of science and technology.



Thus CCPI is a tool designed to be used to foster and encourage companies to adopt the technology and codes of practice leading to the effective reduction of industrial waste in general, and most particularly of hazardous waste.

The Ministry of Public Works, Transport and the Environment considers the CCPI to be an ideal institution to promote, advise on and develop the best environmental practices and the use of the best environmental techniques to reach cleaner production in the Countries of the Mediterranean Basin. To such ends, called on the 9th Meeting of the Contracting Parties to the Barcelona Convention to adopt CCPI as the Regional Activity Centre for Clean Production (RAC/CP) for the Mediterranean Region, within the framework of the Mediterranean Action Programme (MAP).

The Contracting Parties approved the motion put forward by Spain.

2. REASONS WHY A RAC/CP IS CONSIDERED NECESSARY

As it stands today, the concept of sustainable development includes, and gives priority to, a series of industrial practices aimed at reducing the consumption of resources, energy, water and raw materials, while reducing the generation of polluting waste and emissions, both in terms of the quantity and potential hazardousness and toxicity thereof.

With the globalization of the economy and trade relations, there is a need to promote and adopt production systems that are not only more environmentally friendly but also offer greater competitiveness, especially in those regions and countries with a greater potential for development.

In order to achieve such ends a need is seen to establish an information system for such practices and systems, and to promote the implementation thereof, in order to avoid repeating the mistakes already made by other countries with "end of the pipe" (EOP) treatment systems, which have been shown to be unable to completely solve the problems caused by industrialization and have indeed, very often, led to a loss in competitiveness



for those that have employed them indiscriminately.

Cleaner technology and clean production techniques have proven themselves to be the most effective way of guaranteeing the planet sustainability while ensuring the level of development of those societies that adopt such methods.

Systems based on the treatment of pollution which has already been generated represent a series of increasing, on-going costs to industry. Those costs may only be eased by the employment of practices which involve the use of cleaner technology, replacing or preceding treatment systems.

Such production practices are not incompatible with the treatment of any pollution that may still be generated. Moreover, many pollution treatment systems would not be effective if it were not for the prior minimization of pollution and the use of cleaner technology.

Furthermore, the growing demand for products that are more environmentally friendly, including the manufacturing stages even if the production facilities are not located in the consuming market, makes it advisable for companies to avoid the use of environmentally aggressive production practices. In that sense, incorporating the concept of environmental management not as an added cost but as part of a company's global corporate management system means the adoption of more competitive production systems.

While bearing in mind the economic and social differences there are between the countries of the Mediterranean Region, one finds that they also possess a series of common features that would make the use of a networking system attractive, a system that in the shortest space of time possible would ensure that the different players would be able to receive leading edge knowhow and information on production systems which reduce the flows of specific waste and contaminating emissions.

The existence of the Mediterranean Action Plan (MAP) both favours and encourages action on a regional level, aimed at achieving the goals and the spirit of that stated above.

The Contracting Parties to the Barcelona Convention undertake, in Article 4



thereof, to employ the best available techniques, including clean production, bearing in mind their individual social, economic and technological conditions. In Article 5 of the Protocol for the Protection of the Mediterranean Sea against Pollution from Land-based Sources and Activities, the same undertaking is also made.

Many of the countries of the region have already expressed their concern for the subject and have, within their own territories, set up institutions and agencies aimed at fostering the use of clean production systems amongst their companies.

Thus it would seem wise to use the existing centres, and favour the opening of new ones, bringing them all together into a network structure. The network would be aimed at rationally avoiding the same work being done in two different places and facilitating the exchange of experience, the solution of specific problems, the making of proposals, the setting up of demo-projects, joint training projects and refresher courses for those whose work consists of advising companies on the use of cleaner techniques and practices and, in general. The network would seek to achieve as great a level of synergy as possible in all areas of its joint action.

3. WHAT DOES CLEAN PRODUCTION MEAN?

The concepts of clean production, of pollution prevention, of reduction at source, of minimization of waste and polluting emissions, have all been given different definitions by different regions and countries and this has led to a certain degree of distortion when it comes to promoting such practices.

Thus a consensus must be achieved on what such practices consist of if we wish the different markets to act coherently.

Even when speaking of waste treatment systems for waste which has been produced, despite whatever preventive practice may have been employed, some management models are seen as being "cleaner" than others. For each individual situation, accurate identification will lead to the recommendation of the best and most environmentally correct management system.

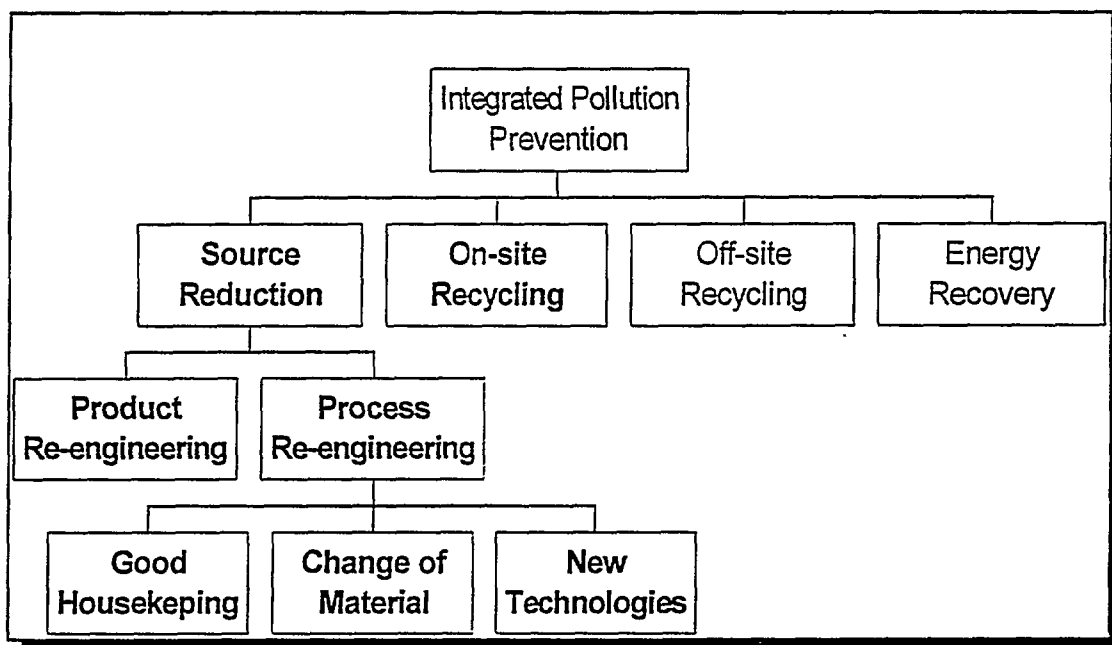


Another important aspect to be borne in mind is the maintenance or improvement of the competitiveness of the industries.

In a world evolving towards the consideration of environmental variables as priorities, the return to the manufacturing sectors of the externalities generated by their activity, makes it necessary for the manufacturing sectors to act consequently in order to maintain their share in the creation of wealth and national product of their country.

An accurate definition of the cost functions, incorporating such externalities, will, in the majority of cases, demonstrate that interventions aimed at reducing levels of environmental aggression will also provide firms with greater competitive advantages.

To many institutions, *integrated pollution prevention* includes the following areas of action:



However, there are others with more restrictive criteria which do not accept the practice of off-site recycling nor on-or off-site energy recovery.

According to the United Nations Environment Programme (UNEP), Cleaner



Production is understood to mean:

"the continuous application of an integrated preventive environmental strategy to processes and products to reduce risks to humans and the environment.

For processes cleaner production includes conserving raw materials and water energy, eliminating toxic raw materials, and reducing the quantity and toxicity of all emissions and wastes before they leave a process.

For products the strategy focuses on reducing impacts along the entire life cycle of the product, from raw material extraction to the ultimate disposal of the product. Cleaner Production requires applying know-how, improving technology, and changing attitudes."

Likewise, cleaner systems and techniques should be employed in the treatment and management of any waste and polluting emissions material finally generated.

4. CLEAN PRODUCTION IN A REGIONAL CONTEXT

As clean production practices should be implemented by the industrial sectors it becomes necessary setting up a permanent channel of communication between the agencies whose task is to promote the employment thereof and these industrial sectors. Such channel should be kept open throughout the course of the process of presentation and promotion and during any diagnosis, search for solutions, feasibility studies, project, implementation, training or follow-up work that may take place later.

Thus, in a case such as this, it would not make any sense to consider that the dissemination and implementation work carried out successfully by a specific RAC located in any one of the countries of the region could satisfy the needs of the countries as a whole. The peculiarities of the different countries, the different customs, languages and social structures, the different features of industrial structure, are in themselves sufficient justification for making the



above statement.

At the same time, and apparently in contradiction to the above, companies, mostly small and medium sized enterprises, need to be provided with the most objective, up-to-date information available, concerning the opportunities they have to implement an environmental management system that gives priority to preventive rather than corrective practices, and the advantages it would represent both on a local and an international level.

The scarcity of existing resources and the existence of a virtually never-ending array of goals, makes it essential for the agencies working in the region to join forces to optimize the use of the limited resources available.

Within the context of MAP, a RAC/CP should look at all of the aforementioned realities and should be able to organize itself in such a way so as to be able to reconcile them.

Thus the promotion of cleaner techniques and pollution prevention and the offering of guidance to enterprises and sectors should be structured around the following premises:

1. It should be carried out by local agencies or centres.
2. It should consider the sociological, cultural, technological, economic and juridical-administrative characteristics of each individual country.
3. It should avoid the transfer of obsolete technology and/or of technology not suited to regional characteristics.
4. It should consider the foreseeable development of regulations, both in the local and external (export) markets, and the constraints such may impose on corporate performance.
5. It should direct its efforts to those industrial sectors or wastes spread throughout the Region, so that the results could be useful to most



countries in the Region.

We only save those goods to which a certain "value" may be attached. Such value may either be based on the price or the scarcity of the commodity (and, more often than not, scarcity means price).

Thus cleaner technology, clean production practices, will always prove acceptable if incorporating a financial (internal or external) or regulatory element to facilitate the integration of the aforementioned externalities into cost functions and thus allowing the comparison of alternative environmental management systems.

Awareness and the adopting of cleaner alternative production systems could, and should, lead to regulatory changes being made to facilitate and promote such systems being adopted by the companies.

Thus when introducing or promoting such production methods and systems all aspects relating to the economic feasibility thereof must be thoroughly examined. In the same way, any recommendations that could be made with regard to the implementation or revision of regulatory measures or instruments of any kind aimed at encouraging the introduction of such production methods and systems, should be carefully reasoned.

Thus we are able to make a proposal concerning the situation which indicates that cleaner technology and clean production methods:

Should be disseminated, promoted and applied by local agents that, on the other hand, should also be provided with the best training and information available thereon, on their application in other similar scenarios, on any action or improvement related thereto, and on the socio-economic framework within which they are to be applied.

The acceptance of the above proposal in itself indicates the guidelines for the action and functions of a RAC/CP.



5. CCPI AS A CLEAN PRODUCTION RAC (RAC/CP)

5.1 Staff

At present CCPI has a director, five highly-qualified technicians (three chemical engineers and two industrial engineers) two administrative clerks and a computer specialist.

To act as a RAC/CP, the above structure could be adjusted as necessary.

CCPI has access to technical data banks. It also has its own library and access to others within the Department of the Environment of the Generalitat de Catalunya. It is also connected to Internet.

To facilitate its work as a RAC/CP, links with other information systems have also been foreseen.

5.2 The experience offered by CCPI

CCPI has been working in cleaner production and waste minimization for the last two years.

Over these two years the work of CCPI has been based around: the dissemination and promotion of the concept of cleaner production throughout the industrial structure and of the advantages offered by the implementation thereof to industrial sectors, the compiling and supply of information on cleaner technology, the fostering of and participation in projects addressing the minimization of environmental pollution, especially in the area of industrial waste, collaborating in the area of training, serving as a meeting point for the different organizations, companies and institutions, publishing manuals and information sheets to disseminate information on specific action and participating in the production of other publications, etc..

Over the period CCPI has developed experience in several different areas which could prove of interest to the countries of the Mediterranean Region as a whole.

- *The importance of performing environmental diagnoses of*



companies

In order to reveal the opportunities for minimization available to a company, an environmental diagnosis should be made to highlight the most important pollution sources and to point out alternatives for reducing them, as a previous step to any project aimed at reduction at source.

In this respect CCPI has promoted or made 30 environmental diagnoses and studies, both on an individual and working group level, aimed at preventing pollution in the tanning, agri-food, surface treatment, metal, textile, paper, paint manufacturing, paint coating and chemical industries.

- *The advantages of disseminating real case studies of pollution reduction at the source, especially for the small and medium-sized enterprises (SME's).*

The industrial network of our Region is basically made up of a sparse group of small and medium-sized enterprises, either needing information or with misconceptions with regard to just what clean production or pollution prevention means or what advantages may be obtained from the implementation thereof.

It is far easier to motivate such companies by telling them about what has happened in other firms similar to theirs (success stories), which illustrate the technical and economic feasibility of such projects, than only through the arguments of the public institutions.

To such ends CCPI has started a series of information sheets called "Production + Clean" (see Appendix II), illustrating case studies of minimization applied by companies in different sectors. The collection is divided into information sheets of two different types:

-Information sheets that, in general terms, explain the



concepts of waste and emission minimization and pollution prevention and provide information on cleaner technologies.

-Information sheets providing case studies of minimization projects carried out by Catalan enterprises. These information sheets are sub-divided according to the kind of minimization action: good housekeeping, process re-engineering, new technologies, change of raw materials, in-site recycling or product re-engineering.

The information sheets show the industrial sector and company at which the work was carried out, provide the background and environmental issues considered by the company when implementing the change, describe the action taken and show the financial feasibility assessment of the action and the savings achieved.

CCPI also collaborated with four case studies (See Appendix III) in the UNEP/Ecomed booklet "Cleaner Production in the Mediterranean Region".

- The importance of fostering applied research work at the companies themselves.*

It is impossible to adapt some of the practices of clean production, including source reduction and the minimization of the pollution generated, without first carrying out applied research to analyse the viability of the proposal.

Wherever possible, such research work should be carried out on the company premises, with the contribution of a specialized institution. Such a level of collaboration is essential if we wish to optimize the benefits of any research work.

In this area CCPI is involved in projects in the textile (wool dyes and bleaching) and tanning sectors.



- *Demo-projects*

With regard to the above, cleaner production systems, however feasible they may appear, give sometimes rise to doubts with respect to their suitability to the characteristics of a specific region, making companies, mainly the SME's, feel somewhat reticent about adopting them.

Joint agency-company demo- projects, which will stand as a practical example, often prove to be the best way to quell any doubts others in the sector may have.

CCPI has four demo-projects under way at companies in the laundering, surface treatment and car wash sectors, with trials designed to ascertain the technical and financial feasibility thereof.

6. CCPI AS A RAC FOR THE PROMOTION OF CLEANER PRODUCTION

6.1 Functions

The main functions of CCPI as a RAC/CP for the Mediterranean Region, within the framework of the Mediterranean Action Plan (MAP) shall include the following:

- A) To participate in MAP activities as a Regional Clean Production Activity Centre, under the supervision of the Coordination Unit.
- B) To coordinate the setting up of a national focal point (NFP) network throughout the countries around the Mediterranean coastline, aimed at fostering cleaner technology and promoting the adoption of clean production systems in the different countries.
- C) To establish a "forum for the exchange of information and experience", to identify any possible lacunae there may be in the



information and resources available and thus allow to plan and establish the needed actions.

- D) To seek out, compile and systematize information on tested technologies to favour clean production and to analyse the technical and financial feasibility thereof within the context of the Mediterranean countries.
- E) To compile and up-date an easily accessible, free of charge "Directory", featuring the best available techniques for clean production and the best environmental practices.
- F) To inform and offer guidance on issues related to clean production.
- G) To facilitate the transfer of cleaner technology amongst the different countries of the Mediterranean Basin, through the organization of specific workshops and seminars.
- H) To promote and participate in expert exchange programmes amongst the different countries and in training activities focused on clean production with sectorial courses, workshops and seminars organized in the different countries of the Mediterranean Basin.
- I) To promote and participate in the publication of case studies with examples of pollution reduction at source achieved by different companies of the region, most especially the small and medium-sized enterprises, and of training material on subjects related to clean production.
- J) The publication of a regular newsletter to provide the latest information on subjects related to clean production and on the achievements made.
- K) To participate with the information exchange centres already set up by different organizations (particularly: the World Bank, UNDP, UNEP, FAO and WHO) and at any meetings that could benefit the implementation of cleaner production practices and methods in the



region.

- L) To collaborate with the MAP Coordination Unit in its efforts to seek external funds for any action requiring financing.
- M) To collaborate on the design and start up of demo-projects.

6.2 Activities

CCPI's activities, as a MAP Regional Activity Centre must be approved by the meeting of the Contracting Parties to the Barcelona Convention, to which the former will present such activities through the MAP Coordination Unit.

On the basis of the mandate and recommendations already established by said Contracting Parties, the RAC/CP proposes starting work in the following ways:

1. Helping to define the best available techniques, with a view to phasing out, to as great an extent as possible, the discharge of substances that are toxic, persistent and liable to bioaccumulate.
2. Collaborating on the identification of the best ecologically rational techniques and environmental practices available, giving priority to such aspects as availability, accessibility, cost and effectiveness.
3. Disseminating information on the existence of the RAC/CP, its objectives and methods of work.
4. Learning about the level of information available in the different countries of the region with regard to the generation of emissions into the atmosphere and waters and waste generation, within the framework of MAP action.

6.3 The funding of activities

The Spanish Government shall fund the activities thus approved and it, in turn, may seek external sources of finance.



If the Contracting Parties to the Barcelona Convention decide to ask CCPI to carry out any activity not included amongst those presented through the MAP Coordination Unit, such activity may be financed either by the MAP or by external sources.

7. THE CREATION AND OPERATION OF THE NETWORK

7.1 Structure and operation

To attain the best transfer of information, and to avoid the waste of efforts, the most appropriate structure is deemed to be a network, built around a central "hub" (the RAC/CP).

The functions of the RAC/CP shall be to coordinate, distribute information, promote, guide and encourage action taken at a local level.

Thus the experience of the individual NFP's will be shared, optimizing both efforts and resources.

To ensure the greater effectiveness of the network, the bilateral contacts established between the RAC/CP and the NFP's should be supplemented by a mechanism for the globalization and consolidation of the flow of subjects/proposals generated and for the consensual presentation of the latter to the appropriate bodies of the MAP.

Thus the structure would be completed with the establishment of a RAC/CP-NFP's meeting (in the same way as other RAC's) empowered to achieve the following:

- to agree on proposals of regional interest.
- to inform on any action carried out.
- to analyse the status of clean production in the region.

Such a mechanism would not exclude attention being paid to specifically bilateral issues or the establishment of priorities for action that may involve from only one to all of the countries in the Mediterranean Basin (always



ensuring, however, that the effects thereof be transmitted to as great an extent as possible).

The capacity for mutual knowledge and joint action must be supplemented by more permanent information mechanisms, designed to inform all of the NFP's of the activities of the network, (a newsletter could prove to be an ideal vehicle).

7.2 Goals

To ensure the effectiveness and efficiency of the network a dynamic link must be set up between the NFP'S and the RAC/CP, permitting an improved, swifter flow of information. It is also important to secure the cooperation of other programmes or agencies that may be working in the area of clean production within the region.

More specifically, the goals of the network shall be:

- A) To disseminate the concept of clean production and the techniques and practices required for the achievement thereof, and information on the advantages clean production offers in terms of the global improvement of the productive sectors.
- B) To foster initiatives and programmes that have a holistic approach to the environment, permitting the pollution generated by the countries of the Mediterranean Basin to be reduced, and to collaborate on the start-up of such initiatives and programmes.
- C) To act as a meeting point for all the different institutions, agencies, companies and NGO's interested in those processes, techniques and practices that will enable us to create cleaner, more environmentally friendly production systems.
- D) To facilitate multi-lateral contact and access to know-how and experience between the different NFP's, to help dynamize and accelerate the introduction of clean production techniques and practices.



- E) To collaborate with the training of the professionals and institutions that have to promote the technology in the different countries of the region, and help to provide them with access to such technology.
- F) To facilitate the transfer of technology, know-how and experience between the different countries of the region.

7.3 The National Focal Points (NFP)

The importance of action being carried out both at a local level and by local agencies highlighted above, underscores the need to establish National Focal Points (NFP), able to disseminate the concepts, practices and techniques of pollution prevention, reduction at source, waste minimization and clean production.

The Contracting Parties shall appoint the NFP's.

8. CRITERIA FOR THE DEFINITION OF PRIORITY ACTIONS

The RAC/CP shall define its priorities for action in accordance with those established to further the goals of the Barcelona Convention for the Protection of the Mediterranean and the protocols thereof, and those of the MAP.

The action proposed shall be presented through the MAP Coordination Unit and shall be approved according to the procedures mentioned above.

While awaiting the first RAC/CP-NFP's meeting, at which the priorities for action are to be established, the RAC/CP suggests that the sectors in which intervention is to take place should be chosen from amongst the following:

- surface treatment and coating
- energy production and use
- pulp and paper
- tannery and other associated sectors
- cement production



- metal industry
- agri-food industries
- organic and inorganic chemical industry
- textile industry

To such ends, the RAC/CP proposes starting its activities with:

1. The organization of a meeting of regional experts in the area of surface treatment and coatings to coincide with the first meeting of the heads of the NFP's, to be held in Barcelona at a date yet to be determined in September or October of 1996.
2. At the same time as the abovementioned meeting, the publication of a leaflet on the start-up of the RAC/CP and its goals.
3. The publication, if possible during the last quarter of 1996, of a first compendium of regional success stories, with a prologue explaining the concepts of clean production. The publication would follow the format of those already published by UNEP in different regions.

The above is merely an indicative listing. The proposals shall be presented through the Coordination Unit, explicitly stating the content, budget, deadlines and funding thereof.

9. HOW TO CONTACT THE RAC/CP

Centre for Cleaner Production Initiatives

Address: Travessera de Gràcia, 56, 4º
08006 Barcelona
SPAIN

Telephone: +34 3 414 7090

Fax.: +34 3 414 4582

E-mail: prodneta@cipn.es

Director: Víctor Macià



Ministerio de Obras Públicas, Transportes
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Secretaría de Estado de Medio Ambiente
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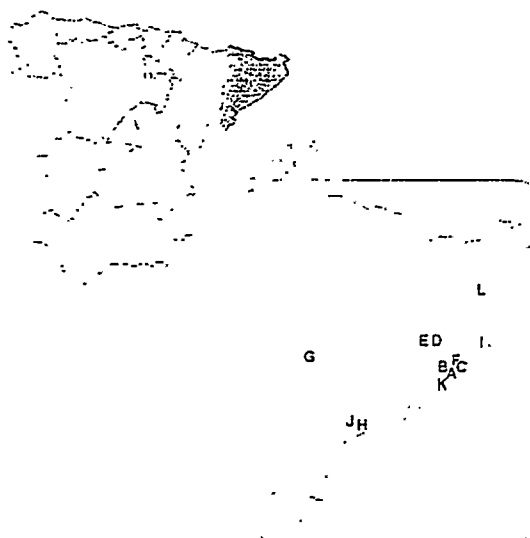


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Appendix I

CATALONIA IN NUMBERS

Territory and population



Surface area (km ²) (1993)	32,000
Coast (km) (1994)	699.3
Road network (km) (1994)	11,560.7
Population (inhab.) (1993)	6,097,000
Density (inhab./km ²) (1993)	191
Average age (1993)	38.6
Working population (1994)	2,605,000
Main cities (inhab.)(1991) :	

A. Barcelona (1,643,542); B. Hospitalet de Llobregat (272,578);
 C. Badalona (218,725); D. Sabadell (189,404); E. Tarrasa (158,063);
 F. Santa Coloma Gramanet (133,138); G. Lérida (112,093).
 H. Tarragona (110,153); I. Mataró (101,510); J. Reus (87,670);
 K. Cornellá de Llobregat (84,927); L. Gerona (68,656)

Macromagnitudes

Total G.D.P (millions PTA) (1993)	11,441,000
G.P.D per capita (1993)	1,866,000
Gross Value Added (millions PTA) (1993)	10,788,359
	agriculture (%) 1.5
	industry (%) 37.7
	services (%) 60.7
Industrial G.V.A. (millions PTA) (1991)	3,042,823
	energy and water 419,188
	mining and 1st processing industry 24,779
	chemical industry 382,919
	metal processing industry 808,766
	food industry 427,472
	textile and leather industry 373,579
	paper industry 207,321
	wood, cork and furniture industry 89,930
	rubber and plastics industry 121,320
	another manufacturing industries 187,549

Consumption indicators

Energy's consumption (Equivalent tons of oil) (1993)	18,000,000
Water's consumption (hm ³) (1992)	3,050
Electricity's consumption (kWh/inhab.) (1993)	4,637

Education

Number of Universities (1994)	8
Registered students (1994)	185,459

Tourism

Visitors (1994)	16237000
Hotel beds (1994)	229,950

Industry		
Industrial establishments (1991)		43,048
	energy and water	1,341
	mining and 1st processing industry	91
	chemical industry	996
	metal processing industry	12,870
	food industry	6,237
	textile and leather industry	8,020
	paper industry	2,903
	wood, cork and furniture industry	6,907
	rubber and plastics industry	1,131
	another manufacturing industries	2,552
Industrial output (millions PTA) (1991)		8,427,814
	energy and water	663,023
	mining and 1st processing industry	100,440
	chemical industry	1,135,502
	metal processing industry	2,379,661
	food industry	1,687,941
	textile and leather industry	954,132
	paper industry	540,922
	wood, cork and furniture industry	224,692
	rubber and plastics industry	308,355
	another manufacturing industries	433,146
Imports (millions PTA) (1993)		3,050,000
Exports (millions PTA) (1993)		1,909,000
Environment		
Urban solid wastes (Tn) (1993)		2,833,061
Industrial wastes (Tn) (1993)		2,555,000
	specials	762,000
	inert	960,000
	non specials	833,000
Waste production sheet form (Tn) (1993)		2,555,000
	food and drink industry (%)	13.03
	textile, clothing and fur industry (%)	2.80
	leather industry(%)	1.81
	wood and cork industry (%)	2.22
	paper industry (%)	5.82
	publishing and printing industry (%)	1.14
	oil refineries and nuclear fuel treatment (%)	0.28
	chemical industry (%)	11.84
	rubber and plastics industry(%)	1.91
	non metal mineral industry (%)	5.75
	metallurgy (%)	19.04
	metal industry (%)	1.71
	engineering and electric material industry (%)	0.27
	electronic material; radio, TV and communications (%)	0.20
	electric power, gas, steam and hot water production(%)	6.54
	another industries (%)	18.32
	by-product recovery (%)	7.32
Public-owned sewage treatment plants (1994)		128
Treatment capacity (m3/day) (1994)		1,453,200
Protected surface area (km2) (1994)		6,481
Information taken out from:		
Catalonia Statistic Directory 1994-1995 (Statistic Institute of Catalonia), Catalonia Figures 1995 (Statistic Institute of Catalonia), Environment Data in Catalonia 1995 (Autonomous Government of Catalonia, Ministry of the Environment)		



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Appendix II



Producció + neta

*Exemples d'actuacions
en minimització de residus
i emissions*



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Fitxa 1

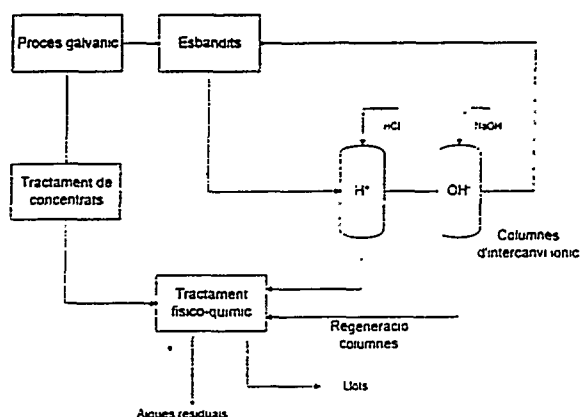
Recuperació i reciclatge en origen

Minimització de residus en un procés de niquelatge químic

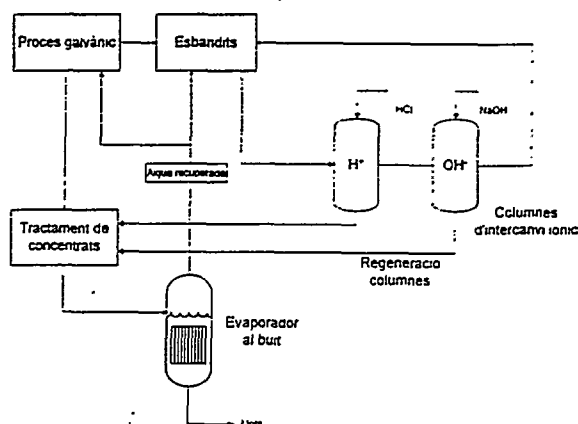
Empresa	ELECTROLESS HARD COAT, SA. Lliçà de Vall (Vallès Oriental)
Sector industrial	Tractament de superfícies metàl·liques.
Consideracions mediambientals	Les indústries de banys galvànics constitueixen, potencialment, una font de generació de residus i aigües residuals amb una concentració significativa de metalls pesants. D'altra banda, el procés de galvanitzatge requereix, en les fases de rentat i esbandit, uns cabals d'aigua significatius, amb la qual cosa, sense un esforç de racionalització, el consum d'aquest recurs pot arribar a ser molt important i el cabal dels efluents que es genera, també.
Antecedents	<p>El factor decisiu que va impulsar l'empresa ELHCO a dur a terme aquest projecte fou el cost que havia de suportar, tant per a la gestió dels residus generats i per al tractament de les aigües residuals, com pels productes químics consumits al llarg de tot el procés.</p> <p>Uns altres dos factors rellevants van ser, d'una banda, la possibilitat d'arribar a tenir un abocament pràcticament nul, amb la disminució del cànon de sanejament que això comportava, i d'altra, l'important estalvi d'aigua aconseguit.</p>
Resum de l'actuació	Es tracta d'una modificació, feta el 1995, per recircular els efluents procedents de les diferents etapes del procés galvànic. Amb la nova instal·lació, tots els efluents, inclosos els de regeneració de les resines de bescanvi iònic i els que s'originen en les operacions de desgreixatge van a parar a un únic dipòsit de concentrats, des del qual s'alimenta un evaporador al buit que funciona amb bomba de calor. En aquest equip es produeix una aigua destil·lada de molt bona qualitat i uns llots que es decanten, es filtren en un filtre premsa i s'assequen. Es tracta, doncs, d'una recirculació gairebé total ja que l'únic residu que finalment es produeix, i en menor quantitat que amb un tractament físico-químic, és aquest fang convenientment assecat.

Diagrames

ANTIC PROCÉS



NOU PROCÉS



Balanços

		Antic procés	Nou procés
Balanç de matèria i energia	Energia	37.500 kWh/any	125.000 kWh/any
	Aigua (*)	6.200 m³/any	pràct. 0 m³/any
Generació de residus	Primeres matèries i materials	66 t/any	5,5 t/any
Balanç econòmic	Personal	12 t/any	6 t/any
	Aigua		
	Energia elèctrica	3,5 MPTA/any	0,70 MPTA/any
	Productes i materials	0,55 MPTA/any	negligible
	Manteniment	0,6 MPTA/any	2 MPTA/any
	Gestió ambiental	1,7 MPTA/any	0,12 MPTA/any
Cost total		0,2 MPTA/any	0,05 MPTA/any
		0,96 MPTA/any	0,05 MPTA/any
Cost total		7,51 MPTA/any	2,92 MPTA/any
Inversió			27 MPTA
Retorn de la inversió:			6 anys

(*) 200 m³/any són d'aigua destil·lada

Conclusions

El projecte de minimització de residus dut a terme per ELHCO suposa reduir de manera significativa la quantitat de llotj generada i eliminar quasi totalment els abocaments d'aigües residuals. En conseqüència, s'aconseguirà minimitzar de forma notable la contaminació. Aquest aspecte comporta per a l'empresa uns estalvis en el cost de la gestió ambiental.

Cal considerar igualment l'estalvi d'aigua que s'obtindrà amb la nova instal·lació com també la baixa conductivitat de l'aigua que es recicla al procés galvanic. Aquesta característica pot influir en una millor qualitat del recobriment de les peces metàl·liques.

El funcionament d'aquesta instal·lació demostra que les empreses del sector de banys galvanics poden oferir un servei competitiu i de qualitat mitjançant l'aplicació de processos no contaminants i de baix consum d'aigua.

Contacta amb el CIPN si:

- desitja rebre més informació sobre les activitats del CIPN
- està interessat en el tema d'aquesta fitxa
- desitja dur a terme un projecte de minimització
- desitja explicar un exemple de minimització

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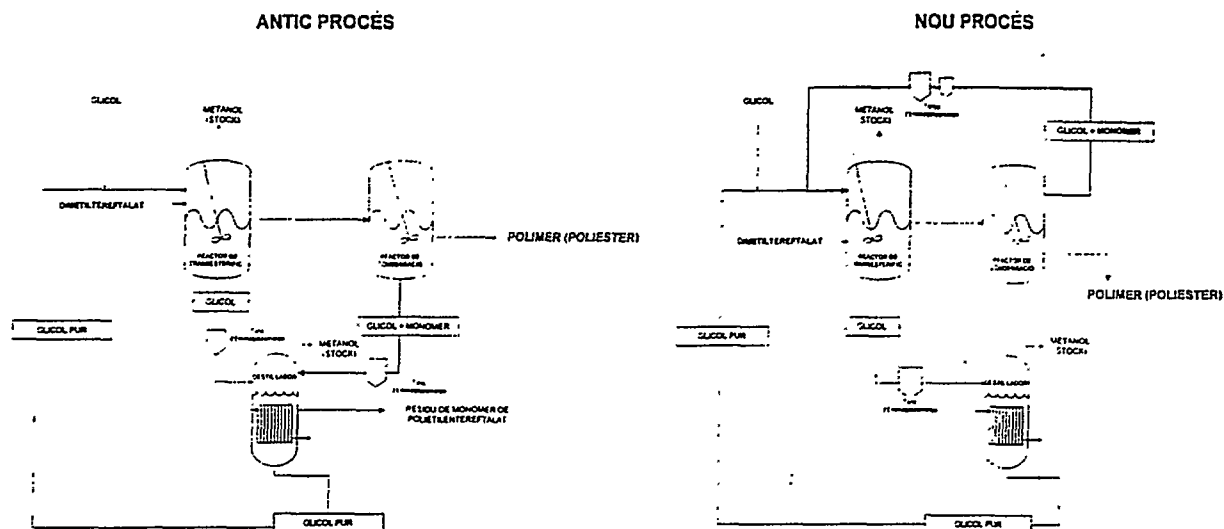
Fitxa 2

Recuperació i reciclatge en origen

Reutilització del glicol

Empresa	NYLSTAR, SA. Blanes (la Selva)
Sector industrial	Fabricació de fibres sintètiques (Poliamida i polièster)
Consideracions mediambientals	<p>El polièster és una fibra sintètica que s'obté mitjançant la reacció de glicol i dimetiltereftalat. Ambdós reactius s'escalfen i després s'incorporen primer a un reactor de transesterificació i finalment a un reactor de condensació.</p> <p>Com a subproductes de la reacció s'obté metanol i l'excés de glicol impur amb monòmer de polietilentereftalat. La destil·lació del glicol per a la seva recuperació genera un residu que en gran part està format pel monòmer utilitzat com a primera matèria en el reactor de condensació. Aquest residu ha de ser eliminat per un tractador autoritzat, amb el consegüent cost.</p>
Antecedents	<p>Els factors concrets que van conduir a dur a terme el projecte foren, d'una banda la consideració del cost de tractament d'un residu format en bona part per monòmer que podia ser reutilitzat com a primera matèria i, de l'altra banda, els estalvis en vapor i aigua que havia de suposar la nova instal·lació.</p> <p>Un altre factor que cal tenir present és l'esperit de millora que anima les actuacions d'aquesta empresa i de la seva casa mare en el camp mediambiental.</p>
Resum de l'actuació	<p>Es tracta d'una modificació de procés, feta la darrera de 1994. En la instal·lació anterior, el glicol de policondensació barrejat amb monòmer de polietilentereftalat se sotmetia a destil·lació per recuperar el glicol, i s'obtenia un residu de monòmer.</p> <p>En el nou procés, la mescla de glicol i monòmer és utilitzada com a alimentació en una partida posterior. La purificació d'aquesta fracció de glicol/monòmer esdevé innecessària i per tant, es produeix un estalvi addicional en el consum de vapor i aigua de refrigeració.</p>

Diagrames



Balanços

		Antic procés	Nou procés
Balanç de matèria i energia	Energia	553.224 kWh/any	535.514 kWh/any
	Aigua	214.200 m³/any	200.678 m³/any
	Vapor	4.750 ktermia/any	4.031 ktermia/any
	Primeres matèries i materials	3.586 t/any	3.554 t/any
Generació de residus		33 t/any	1,4 t/any
Balanç econòmic	Energia	5,704 MPTA/any	5,521 MPTA/any
	Aigua	2,301 MPTA/any	2,155 MPTA/any
	Vapor	7,362 MPTA/any	6,248 MPTA/any
	Productes i materials	328,567 MPTA/any	325,635 MPTA/any
Cost total		343,934 MPTA/any	339,560 MPTA/any
Inversió			8,5 MPTA
Retorn de la inversió:			1,6 anys

Conclusions

La reducció de residus aconseguida amb el nou procés ha estat significativa, la qual cosa implica un avantatge afegit en la reducció dels costos de tractament i eliminació.

Així mateix, la reincorporació del monòmer al procés ha suposat disminuir el cost d'adquisició de primera matèria.

D'altra banda, hi ha un estalvi energètic, en forma de vapor i aigua de refrigeració, en no ser necessària la destil·lació de la barreja glicol/monòmer. També es redueix el consum de catalitzadors.

Contacta amb el CIPN si:

- desitja rebre més informació sobre les activitats del CIPN
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Fitxa 3

Bones pràctiques

Reducció del volum dels efluents de neteja

Empresa	Curtex Industrias Sintéticas SA. l'Hospitalet de Llobregat (Barcelonès)
Sector industrial	Fabricació de productes químics per a les indústries de cuir, tèxtil i plàstics.
Consideracions mediambientals	Un dels problemes mediambientals amb què es troba l'empresa CURTEX és l'important volum d'aigües residuals generades com a conseqüència del rentat de reactors, dipòsits, paviments, etc.
Antecedents	A causa d'una banda, de la normativa interna del grup i de l'altra, de la necessitat d'adaptar-se a una determinada qualitat d'abocament, CURTEX es va veure en l'obligació de tractar les seves aigües residuals mitjançant la instal·lació d'una planta de tractament físico-químic amb una capacitat de 200 m³/d. Tanmateix, la no disponibilitat d'espai suficient per a la seva ubicació va plantejar la necessitat de dur a terme un estudi per minimitzar els volums a tractar i, conseqüentment, reduir les dimensions de la instal·lació de tractament.
Resum de l'actuació	<p>Hi havia cinc punts en els quals va incidir l'estudi:</p> <ul style="list-style-type: none">- Davant l'existència d'una xarxa de desguassos excessiva i no racionalitzada, es va procedir a eliminar-ne una gran part deixant només els estrictament necessaris. Això va obligar a limitar l'ús d'aigua en operacions de neteja susceptibles de fer-se mitjançant sistemes alternatius.- Les mànegues emprades en el rentat dels reactors, etc. no disposaven d'un sistema de control de la quantitat de l'aigua utilitzada en l'operació. Es va substituir la sortida lliure per una sortida de l'aigua mitjançant l'ús de pistoles amb gallet.- El sistema de dutxes per a la captació de pols provinent dels atomitzadors existents treballava en circuit obert, i generava un gran volum d'aigües residuals. Es va tancar el circuit, de manera que es recirculava l'aigua utilitzada i es produïa un abocament zero.- La seqüència en la planificació de les partides a fabricar no seguien cap ordre concret sinó que atenia a la prioritat de lliurament del producte, la qual cosa provocava una necessitat excessiva d'operacions de rentat. Es va adoptar una seqüència de fabricació per ordre ascendent de colors i per campanyes, i es va minimitzar la necessitat de rentat dels reactors entre producte i producte.- Els vessaments fortuits o les fuites de producte es diluïen amb aigua. Es varen col·locar materials absorbents en els llocs on això es produïa més freqüentment, de manera que es generava un residu més fàcilment caracteritzable i gestionable.

Balanços		Antic procés	Nou procés
Balanç de matèria	Aigua residual generada	28.280 m³/any	15.960 m³/any
Balanç econòmic	Aigua	3,3 MPTA/any	1,9 MPTA/any
Conclusions		<p>Les mesures adoptades han fet disminuir el cabal mitjà d'aigües abocades per l'empresa.</p> <p>El canvi de circuit obert a tancat en els atomitzadors ha comportat una disminució de 100 m³/d.</p> <p>El canvi en l'ordre de fabricació, l'eliminació dels desguassos innecessaris i l'ús de pistoles en les mànegues han reduït el cabal d'aigües residuals en uns 30 m³/d.</p> <p>Per tant, i com a conseqüència de l'estudi, les solucions implantades i la col·laboració dels treballadors, s'ha reduït el cabal d'aigües residuals fins a 70 m³/d amb la qual cosa s'ha aconseguit fer més petita la planta de tractament a construir i adaptar el projecte a les disponibilitats d'espai.</p>	

Contacti amb el CIPN si:

- desitja rebre més informació sobre les activitats del CIPN
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Fitxa 4

Bones pràctiques

Millora en el procediment de neteja d'equips

Empresa	CPC España, SA. Martorell (Baix Llobregat)
Sector industrial	Fabricació de productes alimentaris.
Consideracions mediambientals	<p>En la línia de producció de maioneses i al final de cada torn de fabricació, a més a més dels equips, s'han de netejar les conduccions encara plenes de producte. La neteja es fa amb aigua, detergents i desinfectants (germicides i bacteriològics). D'una banda, es genera un residu que ha de ser tractat per una empresa autoritzada amb el consegüent cost. D'altra banda, es generen unes aigües residuals, amb alt contingut en matèria orgànica, que han d'ésser tractades en una depuradora.</p>
Antecedents	<p>Els factors concrets que van conduir a dur a terme el projecte van ser, d'una banda, l'interès mostrat per l'empresa per totes aquelles accions preventives que permetessin una reducció en la generació de residus, és a dir, la minimització, o la seva valorització, enteses com a factor de competitivitat no solament de cara al mercat sinó, fins i tot, en l'assignació de produccions a les diferents fàbriques del grup.</p> <p>D'altra banda, reduir el cost que representava la generació d'aigües residuals provinents de la neteja i el de la gestió d'un residu format, en gran part, per maionesa que estava en perfectes condicions d'envasat i de comercialització abans del procés de neteja.</p>
Resum de l'actuació	<p>Es tracta d'un canvi del procediment de neteja de les línies que transporten la maionesa mitjançant una modificació d'aquestes, de manera que totes tinguin el mateix diàmetre i les corbes tinguin un radi tal que permetin el pas d'una bola de silicona impulsada per aire comprimit que pressiona la maionesa allà retinguda fins a la sortida.</p> <p>Una vegada extreta la maionesa, es fa passar aigua amb detergents i desinfectants (germicides i bacteriològics). El cabal i la càrrega orgànica abocada a les aigües residuals és sensiblement menor.</p> <p>La maionesa així recuperada, 5 tones anuals, s'envasa, ara com a part de la producció. La resta de residus líquids procedents de la neteja, unes 15 tones anuals, es valoritzen com a pinso per animals.</p>

Balànços	
	Nou procés
Valorització de residus líquids	15 t/any
Estalvi en la generació de residus	20 t/any
Maionesa recuperada	5 t/ any
Inversió	0,5 MPTA
Retorn de la inversió:	1 any*
(*) Tenint només en compte els beneficis obtinguts per la maionesa recuperada	
Conclusions	<p>Amb una simple modificació del procediment de neteja s'aconsegueix fonamentalment un estalvi en la generació d'aigües residuals i un aprofitament de producte.</p> <p>La inversió es recupera en un període molt curt.</p>
Altres dades:	Aquesta actuació forma part d'una política mediambiental global de l'empresa, que compta amb un equip humà per estudiar aquesta i altres possibles millores que s'integren en un programa de més ampli abast que implica canvis tècnics i de comportament mediambiental proactiu del personal.

Contacti amb el CIPN si:

- desitja rebre més informació sobre les activitats del CIPN
- està interessat en el tema d'aquesta fitxa
- desitja dur a terme un projecte de minimització
- desitja explicar un exemple de minimització

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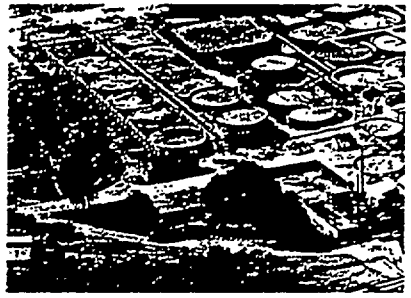


Ministerio de Obras Públicas, Transportes
y Medio Ambiente
Secretaría de Estado de Medio Ambiente
y Vivienda



Generalitat de Catalunya
Departament de Medi Ambient
Centre d'Iniciatives per a la
Producció Neta

Appendix III



CLEANER
PRODUCTION
IN THE
MEDITERRANEAN
REGION

Ecomed

Agency for the Sustainable
Development of the Mediterranean

In cooperation with



United Nations Environment Programme
Industry and Environment

and

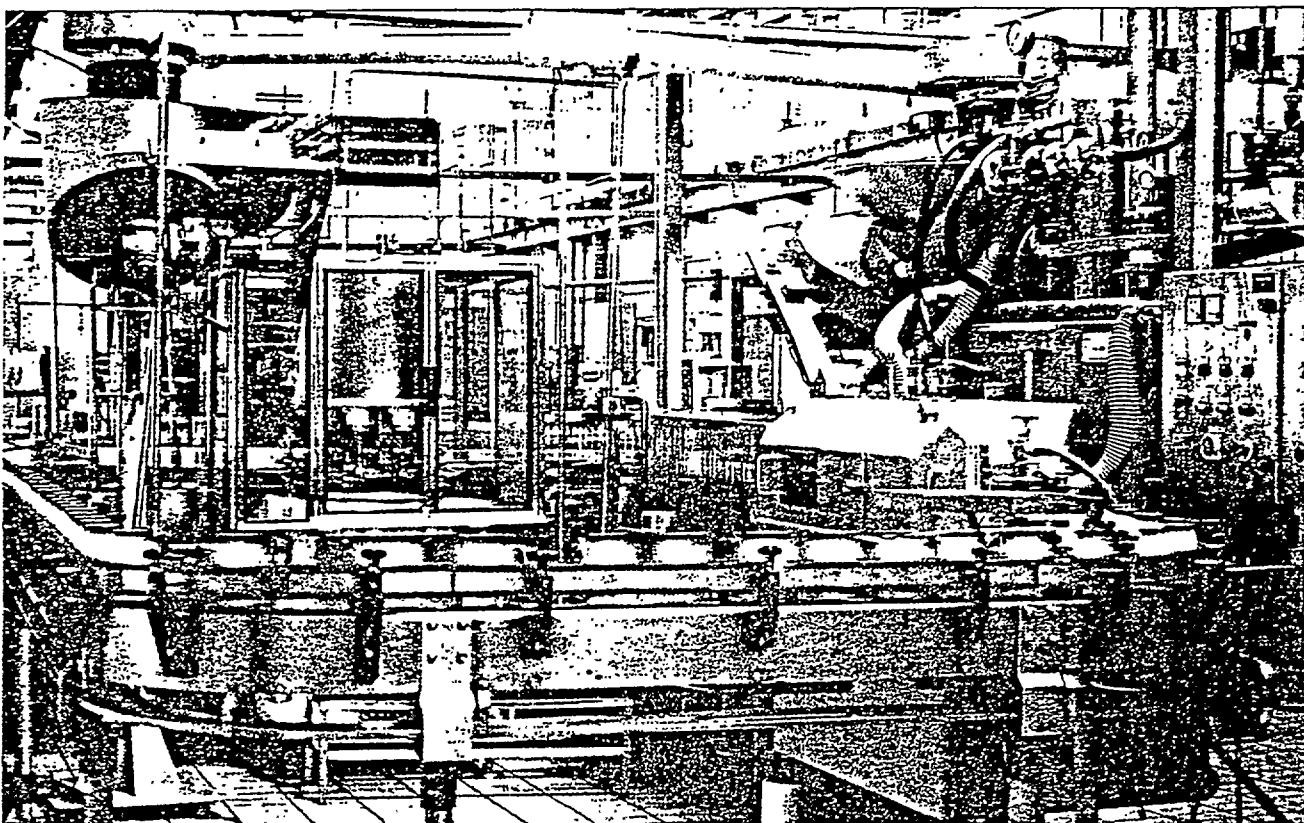
IMPRESA
ambiente

Cleaner Production Programme

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Good Housekeeping Practices in a Food Processing Plant



Background

CPC Spain is a member of the multinational group CPC International Inc. and is a major producer of corn and other food products. CPC Spain has supported waste minimization strategies in its production processes, and has set up an environmental improvement team. This team has been the key factor in achieving the following results: quantifying generated waste and assessing its economic impact for the company; identifying sources of waste and the basic causes for their generation; implementing technological changes, new working procedures and training regarding good practices; and evaluating the potential for resource recovery.

The CPC Spain food product facility combines vegetable oil, vinegar and

pasteurized eggs to produce mayonnaise. The delivery of ingredients from storage tanks to a mixing tank by pumps is controlled by a pressure and level control system. Mayonnaise product is pumped to a packaging unit.

The mayonnaise production process equipment is periodically cleaned. Water is flushed through the piping, waste water containing mayonnaise and drained to the sewer, resulting in high levels of biological oxygen demand (BOD).

Cleaner Production Application

The environmental improvement team proposed an improvement based on the design of a silicone ball that can be propelled by air through piping, pushing mayonnaise into the bottle filling machine. In this way, mayonnaise that

would normally be part of the process waste water stream is saved and sold as product.

Enabling Technologies

For implementing the cleaner production system, the following was necessary:

- ❖ Design the silicone ball to push the mayonnaise product through the piping;
- ❖ Implement minor piping system, modifications to avoid blocking the ball;
- ❖ Relocate some process sensors;
- ❖ Install pressurized air supply near the piping; and



- ❖ Train operators to operate and maintain the new system.

mayonnaise recovered from piping; the remainder is rinse water that is no longer necessary);

Country
Spain

Advantages:
The changes have the following advantages:

- ❖ Reduce waste treatment and disposal costs; and

Industry
Food Processing

- ❖ Reduce waste stream by about 20 tons per year (5 to 7 tons per year of this former waste stream is

- ❖ Recover value of saleable materials (this is recovered mayonnaise, which is sold as animal feed).

Company
CPC Spain

Economic Benefits

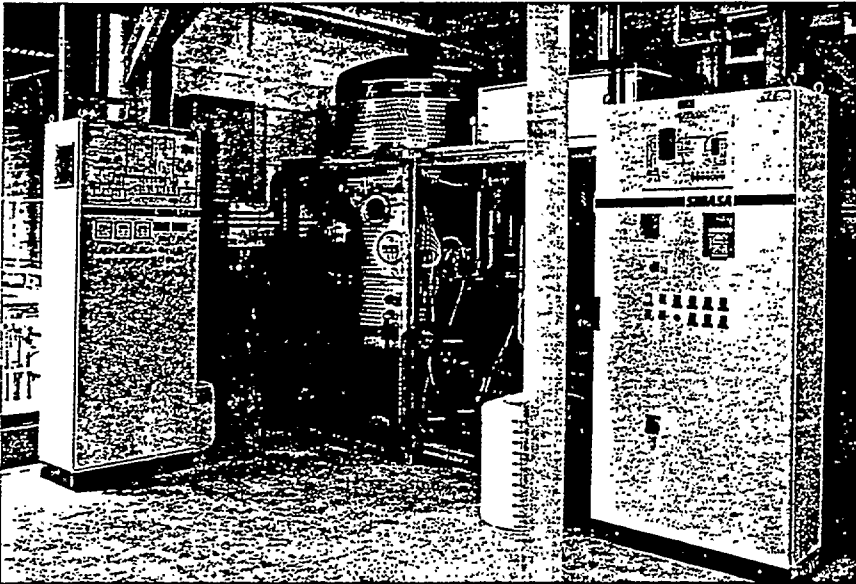
Cost Saving	US Dollars/year
Labor	22,400
Water	4,400
Chemical products	14,392
Energy	(11,200)
Maintenance	1,200
Environmental penalties	2,880
Sludge disposal	2,800
TOTAL	36,872
Investment	216,000
Payback period	6 years

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Striving for Zero Water Waste in a Metal Finishing Facility



Background

Electroless Hard Coat is a metal finishing company specializing in surface coating metal pieces and structural elements for the aeronautics, automobile, telephone and computer industries. The company has a staff of 15 persons.

The metal finishing process includes two consecutive steps:

- ❖ Stage 1 - surface cleaning and preparation using degreasing solutions (alkaline, chemical and ultrasound) and acid solutions (nitric and sulfuric) to eliminate residual oxides and greases.
- ❖ Stage 2 - immersion of the metal parts in a solution containing ions of the coating metals (Zn, Cr and Ni).

The principal pollutants are in the process rinse waters generated by treated surface washing (alkaline, acid cyanide chrome and heavy metals) and spent chemical baths. The company installed a physical-chemical treatment plant and an industrial water recovery system for reducing the environmental impacts of the pollution.

The main problem with process waste water treatment was the partial contamination of waste water effluent and the generation of large quantities of sludge containing heavy metals and chemical compounds.

Cleaner Production Application

A new technology based on a vacuum evaporator for water effluent and treatment of spent chemical baths was developed. It replaces the major part

of the traditional physical-chemical treatment plant.

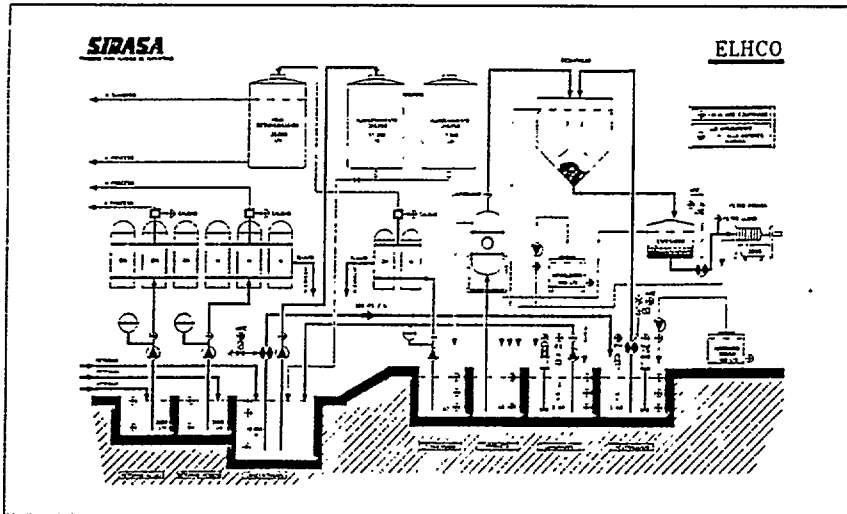
Enabling Technologies

The technology features an economic evaporation process consisting of a pressurized electric heating pump. A cooling system condenses steam from the evaporation process, resulting in distilled water that can be reused in the industrial process. The waste water stream is considerably reduced in volume.

Advantages

The changes have the following advantages:

- ❖ A 100% reduction in water consumption and zero discharge;
- ❖ A 97% savings in chemical products formerly used for conventional water treatment and control;
- ❖ A 80% savings in labor costs due to the reduction of water treatment and sludge disposal operations;
- ❖ A 90% reduction of sludge produced by conventional water treatment;
- ❖ Elimination of environmental penalties due to water emissions exceeding limits, and elimination of the cost of related analytical controls;
- ❖ Improved public image due to reduction of contamination in water emissions; and
- ❖ Quality improvement in the final product to the use of distilled water (from the evaporator) in the rinse systems.



Country
Spain

Industry
Metal Finishing

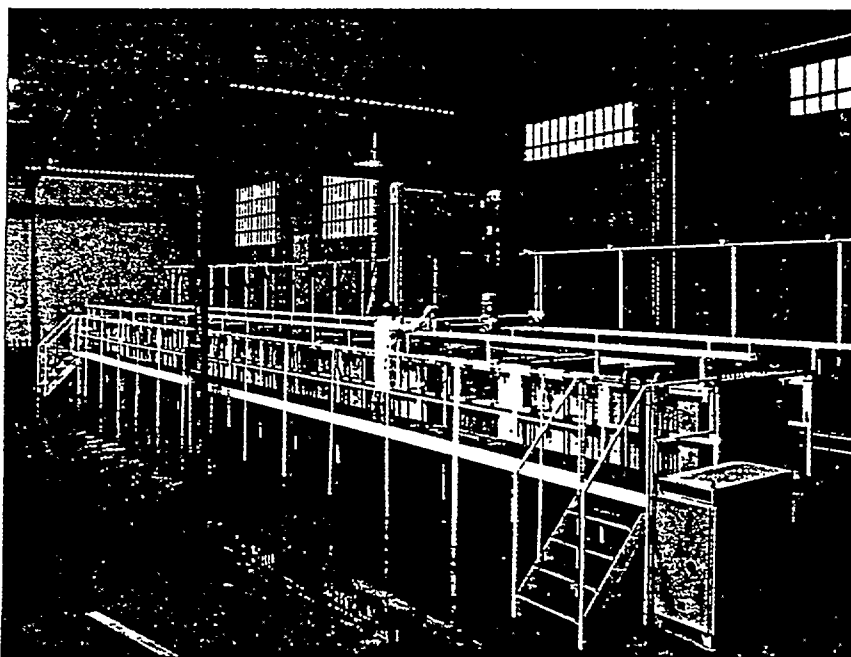
Company
Electroless Hard Coat S.A.

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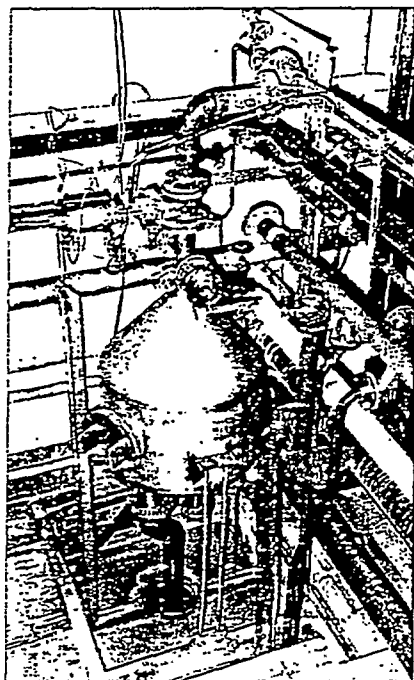
Economic Benefits

Cost Saving	US Dollars/year
Waste reduction	9,600
TOTAL	9,600
Investment	4,000
Payback period	2.4 years

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Material Reuse in a Textile Plant



Background

Nylstar, founded in 1923, produces polymers and synthetic fibers and filaments. The company has 633 employees and turnover of US\$ 109 million, and is a joint venture of Rhone-Poulenc and Snia Fibre. Nylstar produced 28,706 tons of polyester in 1994.

Polyester is a synthetic fibre obtained through the reaction of glycol and dimethylterephthalate. Both reagents are heated, combined and processed, first in the transesterification reactor, and then in the condensation reactor. An excess of glycol contaminated with polyethylterephthalate monomer and methanol are the reaction byproducts. The mixture of glycol and monomer is normally distilled, obtaining glycol that can be processed for reuse, creating a waste stream composed mainly of monomer. The monomer had to be treated before being disposed, and increases water consumption in the distillation unit.

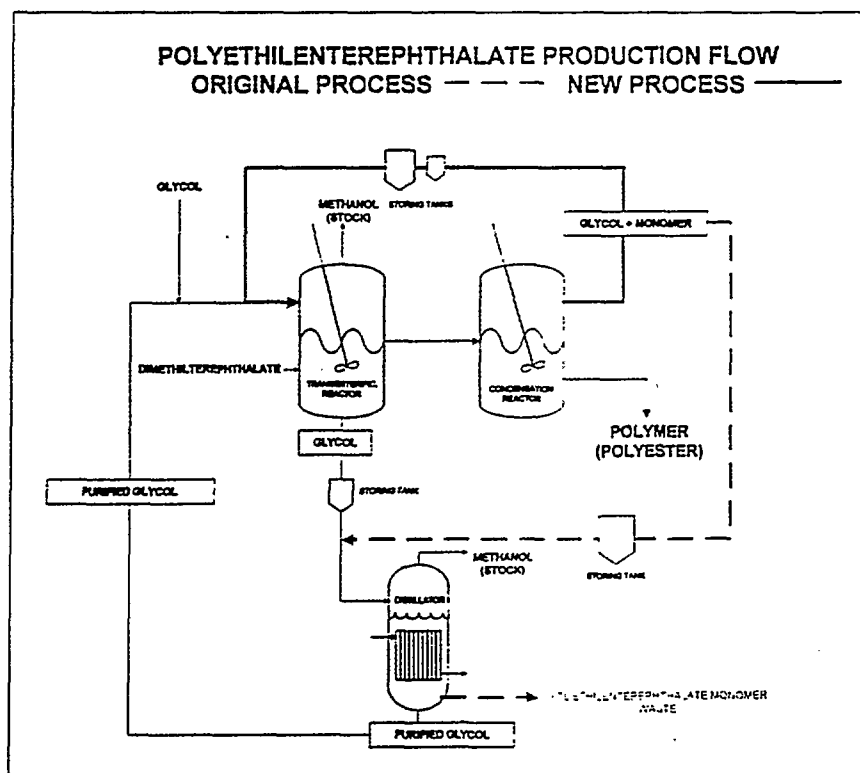
Cleaner Production Application

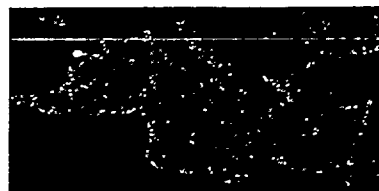
At the end of 1994, Nylstar undertook a minor but significant modification within the process. The objective was to reuse the mixture within the transesterification reactor to optimize raw material consumption. This mixture, composed of glycol and polyethylterephthalate monomer, obtained from the polycondensation reactor, is fed directly to the first reactor. This avoids distillation of the mixture and the generation of a monomer waste stream. These measures were implemented due to company environmental policy and the savings potential.

Enabling Technologies

The cleaner production solutions were possible thanks to Nylstar's understanding of the production processes. Nylstar also conducted research on possible changes to the

polyester polymer product due to the use of glycol and monomer instead of simple glycol.





Advantages

- ❖ Waste minimization: The original process generated approximately 33.4 tons per year of waste. The new process generates only 1.4 tons per year;
- ❖ Decrease in raw material consumption: The new process reduced raw material use by 32 tons

per year. The new process has also reduced catalyst consumption by 2 tons per year;

- ❖ Reduction of treatment and disposal costs; and
- ❖ Reduced energy costs: This resulted from the elimination of the distillation step for the glycol and monomer mixture.

Country
Spain

Industry
Textile

Company
Nylstar S.A.

Economic Benefits

Cost Saving

Raw materials	23,456 US\$/year
Electricity consumption	17,710 kwh/year
Steam consumption savings	1,075 tons/year
Water consumption savings	13,522 tons/year
Waste treatment savings	1,635 US\$/year

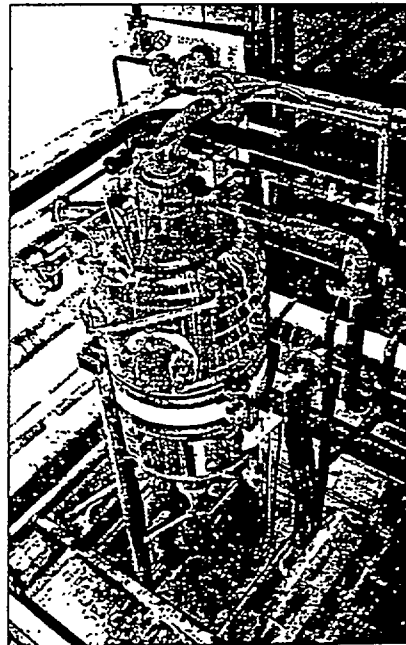
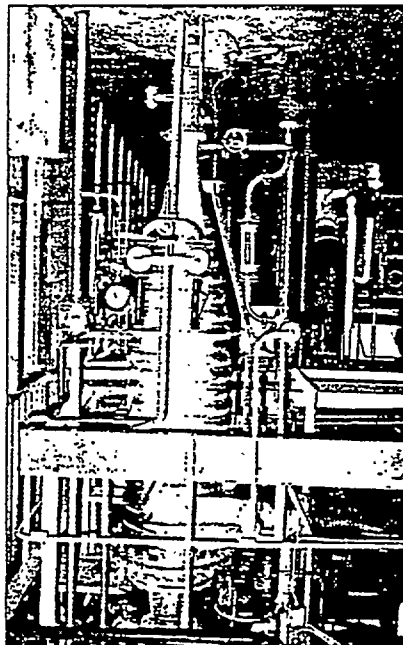
TOTAL

Investment	68,000 US\$
Payback period	13 months

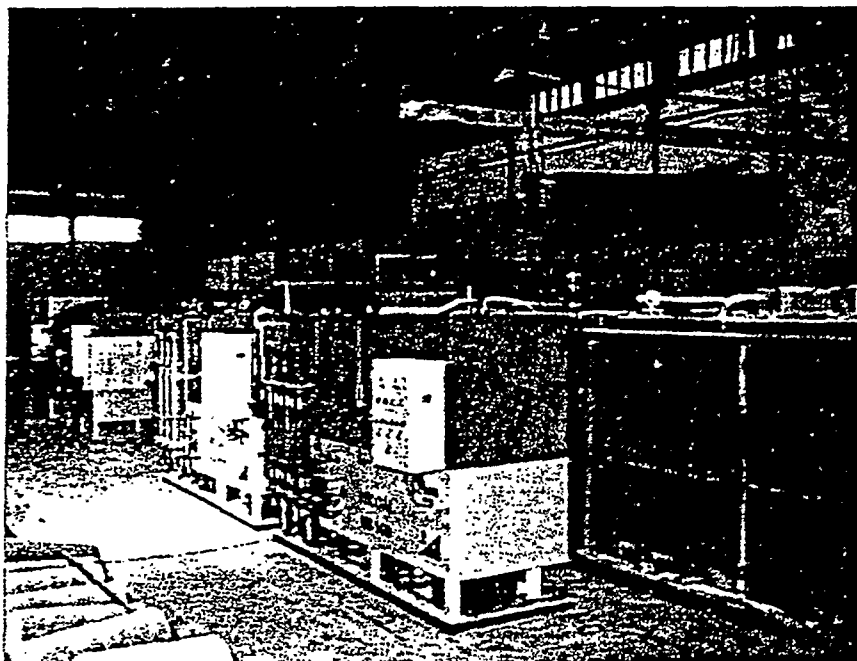
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Striving for Zero Discharge in an Aluminum Treatment Plant



permits achievement of these new demanding targets.

Cleaner Production Application

The RECOAL system makes possible separation of aluminum from the etching bath and the anodizing bath, and recovery of sodium hydroxide and sulfuric acid. It is also possible to recovery a significant portion of rinsing water.

Enabling technologies:

The RECOAL system integrates a number of technologies, including:

- ❖ ion exchange;
- ❖ ionic retardation; and
- ❖ membrane separation

Advantages:

- ❖ A 70% reduction of sludge produced by the treatment plant.
- ❖ Savings of 20% in consumption of water, 60% in consumption of sodium hydroxide, and 60% in consumption of sulfuric acid.

Background

Aluminum treatment plants produce a considerable quantity of sludge because of the chemical solutions used. Primarily, when treating hard-draining surfaces there are large quantities of chemical concentrated drag-out.

Existing waste water treatment plants generally are based on equalization, neutralization and precipitation. The final generated sludge must then be thickened and dewatered.

Effluent treatment by hydroxide precipitation is still widely used, even though difficulties related to such techniques are documented.

In essence, the classic treatment by precipitation does not decrease pollution. It transfers it from a liquid phase to a solid phase. A preventive approach would consider the following criteria:

- ❖ Chemicals for aluminum treatment should be low or not toxic (for example, biodegradable chemicals

not containing phosphates, silicates, or chromium);

- ❖ Separation, recovering and recycling equipment appropriately at each phase to maximize production efficiency; and

- ❖ Minimized effluent treatment.

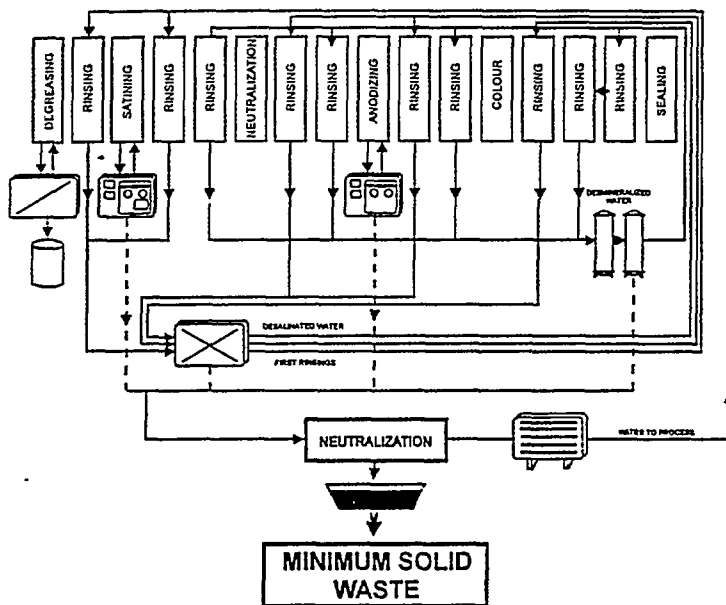
RECOAL system, a research technology developed by SIDASA,

Economic Benefits	
Cost Saving	US dollars per year
Sulfuric acid	40,000
Sodium hydroxide	72,000
Water	48,000
Sludge disposal	80,000
TOTAL	240,000
Investment	400,000
Payback period	20 months



RECOAL SYSTEM

NEW TECHNOLOGY FOR THE REDUCTION OF WASTES TO A MINIMUM IN ALUMINIUM ANODIZING PLANTS



PRODUCT	UNIT	ANNUAL CONSUMPTION		
		CONVENTIONAL	RECOAL	SAVING
SULPHURIC ACID	Tn/year	160	56	65%
CAUSTIC SODA 50%	Tn/year	260	130	50%
WATER	m ³ /year	35.000	7000	80%
CALCIUM HYDROXIDE	Tn/year	17,5	6	65%
SLUDGE PRODUCTION	Tn/year	865	410	53%

Country
Spain

Industry
Metal finishing

Company
DECORAL, S.A. - SIDASA

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ANNEX V

**INFORMATION ON THE REGIONAL ACTIVITY CENTRE
FOR CLEANER PRODUCTION**

Submitted by Greece

THE REGIONAL CLEANER PRODUCTION CENTER FOR THE MEDITERRANEAN AND THE BLACK SEA

SHORT SUMMARY

On October 13, during the CRANS MONTANA Forum for the Mediterranean, the Managing Director of the United Nations Industrial Development Organization (UNIDO) announced that Greece was selected for the location of the Regional Cleaner Production Center for the Mediterranean and the Black Sea Region.

The Regional Center for Clean Production (RCPC) will be complemented by a network of focal points in the various countries concerned. In certain countries several National Focal Points may be developed each reflecting the needs of different industrial branches. In such a case there may be a need to upgrade one of the National Focal Points to a National Cleaner Production Center (NCPC).

The RCPC in Greece is anticipated to co-ordinate the promotion of clean technologies in the industrial processes of the countries in the region especially those which are in a development pace. In this sense the RCPC is expected to:

- Promote action aimed at protecting the environment and at the same time encourage economic growth in the Mediterranean and Black Sea countries;
- Coordinate the efforts being made by the individual countries in the region.

The RCPC and the NFPs will be tied to the UNIDO/UNEP pilot project to establish and support Clean Production Centers in 20 countries world wide.

Environmental protection can only be secured through integrated development policies taking into account the numerous components of environmental management amongst which cultural, social, economic and technological elements play a critical role. The availability of safe, proven and appropriate clean technology for industrial operations is an absolute pre-requisite of any sound development policy. What is missing in industry in many of the newly industrialized or developing countries in the areas targeted by this project is awareness of and access to existing clean, low-waste technologies.

In many countries, including those of the Mediterranean and Black Sea Areas, the tendency is to regard environmentally responsible technology as an expensive luxury. Yet experience shows that competitive advantages based on ignoring environmental impacts are illusory, and the resultant damage is costly to correct, if not irreversible. Assistance must be given to industries to show how they can operate in a commercially and technologically more efficient way and at the same time not damage the environment.

The introduction of cleaner and more efficient technologies has already proven very beneficial in many industrialized as well as developing countries. Financial gains are often obtained in parallel with reductions in the pollution output.

Common problems and common concerns regarding environmental impact of industrial activities in the countries of the region are best addressed through close international cooperation and coordination. There is a need to formulate a common strategy and harmonize the implementation of the remedial actions to be taken in the industrial sector. This can be ensured through the establishment of an appropriate institutional network which will enable continuous dialogue and proper addressing of the relevant issues affecting industry, governments and the people of the entire region.

2.2 History of project development

The environmental aspects of industrialization play an important role in UNIDO's activities. In particular, the promotion of all efforts to initiate an Ecologically Sustainable Industrial Development, ESID, within UNIDO's activities was requested by the member states during the Fourth Session of the Organization's General Conference, held in November 1991 (GC.4/ Res. 18)

The Greek Government, being fully aware of the increasing importance of environmental considerations in connection with economic development, organized and hosted a Conference on the Environment and the Mediterranean in cooperation with the "Fondation du Forum". The Conference, to which UNIDO was invited, took place in Athens in April of 1992.

At the Conference UNIDO chaired several sessions, one of which was entitled "Environment Protection and Recycling of Waste". During this session in particular, and the Conference as a whole in general, UNIDO clearly demonstrated the special attention it pays in assisting countries, with emphasis on developing countries, in their efforts to deal with industrial environmental problems.

At the Athens Conference there was much support from the participants for UNIDO's concept of an international institutional vehicle to deal with the industrially related environmental problems of the area. As a consequence of this Conference UNIDO decided to investigate the need for and viability of such an institutional vehicle, including feasible structures and possible modes of financing, for the Mediterranean and Black Sea Basins. The two main objectives of such an institutional vehicle would be to:

- * Promote action aimed at protecting the environment and at the same time encourage economic growth in the Mediterranean and Black Sea countries.
- * Coordinate the efforts being made by the individual countries in the region.

An interregional study entitled "Preliminary Assessment of a Mediterranean and Black Sea International Network for Clean Technology Transfer" was initiated by UNIDO in 1992 (UNIDO Project Number UC/TNT/93/034). The final objective of the study was to recommend a feasible mechanism for an international cooperation in reducing industrial pollution within the Mediterranean and Black Sea Area using Cleaner Production Technologies. A network would be established covering the whole region. In order to define and recommend such a mechanism and network the following factors would be investigated as a first phase of the study:

- * The willingness and capability of the individual countries to participate.
- * The present work of individual countries, international organizations and bilateral cooperation in addressing these problems in the targeted region. Several large programmes have already been devoted to the environmental problems of the Mediterranean and Black Sea Region. Duplication of on-going efforts must be avoided, and a pre-requisite for future activities within a Mediterranean and Black Sea International Network for Cleaner Production is that the need for such an additional plan, devoted specifically to industrial pollution concerns, must be confirmed. Such an additional plan should complement, rather than duplicate, on-going efforts in order to increase the over-all effects of the total environmental activities in the region.

- * Given that a real need for an industrial plan is identified, the most effective way of implementing such a plan should be defined. One alternative to be considered would be the establishment of a flexible network of information and expertise covering the whole region, involving both the government and private sectors as well as all pertinent international organizations. The network should present, transfer and maintain advanced clean technologies to all parties concerned in the Mediterranean and Black Sea Region. The network would probably be coordinated from one Regional Centre cooperating with one or several National Focal Points in each participating country. Such a network could thus provide a useful structure for the orientation and back up of the international environmental plans already on stream.

The present report will summarize the efforts performed as a part of the UNIDO study and will also recommend a suitable structure for the network as well as suggesting a location for the Regional Cleaner Production Centre and define a detailed work programme for this centre and an outline of the duties for the National Focal Points.

2.3 Countries visited

As a first part of the UNIDO study several countries were visited by two different teams of experts. The following countries were visited by a team from Dobbin Milus International:

- * Albania
- * Bulgaria
- * Egypt

The following four countries were visited by a team headed by Ph. D. Louis Rey:

- * Cyprus
- * Morocco
- * Romania
- * Turkey

In a second part three countries, expressing a special interest in hosting the Regional Cleaner Production Centre for the network, were visited by the undersigned. In the two last countries visited, Romania and Turkey, Grant Ramsay, UNIDO project manager, was also present. The three countries showing interest to host the RCPC are:

- * Greece
- * Romania
- * Turkey

4. DESCRIPTION OF THE NETWORK

4.1 Justification

Environmental pollution in the Black Sea and Mediterranean Region is serious and industry is a significant contributor to this pollution. While many national and international programmes are underway to address the overall environmental issues in the region, none of these seem to specifically address industrial problems and the promotion of cleaner production technology as a means of industrial pollution control. The aim of the international network for cleaner production for the region around the Black Sea and Mediterranean Basins is to specifically address both transboundary and national industrial pollution problems of the region through promotion of cleaner production technologies.

4.2 Main objectives

The main objectives with the establishment of an international network for cleaner production in the Region around the Mediterranean and Black Sea Basins are:

- * Promote preventive actions aimed at protecting the environment in the Mediterranean and Black Sea Countries from negative industrial impact.
- * Promote the use of cleaner production within the industry in the Mediterranean and Black Sea Countries mainly through dissemination of information concerning specific demonstration plants and/or case studies for the respective industrial branch.
- * Encourage economic growth through environmentally sustainable industrial development in the Mediterranean and Black Sea Countries .
- * Coordinate the efforts being made by the individual countries in the region in order to maximize the positive effects of these endeavours and to ensure that all participating countries can profit from the advantages made available through the use of cleaner production technology.

4.3 Definitions

- RCPC Regional Cleaner Production Centre
- NFP National Focal Point for cleaner production
- NCPC National Cleaner Production Centre
- Region The entire region around the Mediterranean and Black Sea Basins.

4.4 General structure

The Mediterranean and Black Sea International Network for Cleaner Production would essentially be based on one or several National Focal Points, NFP's, for each participating country coordinated by one Regional Cleaner Production Centre, RCPC, for the whole region. In certain countries with well developed cleaner production activities and several National Focal Points for different industrial branches there might be a need to upgrade one of the National Focal Points to a National Cleaner Production Centre, NCPC.

The NFP's or NCPC for each country will exchange information with national industries interested in applying or developing cleaner production techniques in order to help obtain an environmentally sound industry. Cooperation with technical institutions and universities should also be encouraged. The day to day administration of each NFP would be financed by the respective member country while demonstration projects and other main activities requiring substantial investments and/or operating costs would be financed through international funds made available through the Regional Cleaner Production Centre, RCPC.

UNIDO would closely follow the development and activities of the international network, but the full responsibility for the coordination of the activities in the different member countries would fall on the RCPC.

The development of the international network for cleaner production should be implemented in two subsequent phases:

- Phase I: Establishment of a Regional Cleaner Production Centre for the Mediterranean and Black Sea Region to initiate and coordinate the International Network.
- Phase II: Establishment of one National Focal Point for Cleaner Production, NFP, for each participating country in the area to fully develop the International Network. The second phase can be implemented gradually as funds are made available and new countries in the region show their interest to participate in the network. The establishment of NFP's in the Mediterranean and Black Sea Region should be tied to the UNIDO/UNEP pilot project to establish and support National Clean Production Centres, NCPC's, in approximately 20 developing countries world wide.

5. STRUCTURE OF THE REGIONAL CLEANER PRODUCTION CENTRE. RCPC

5.1 Main objectives

The main objectives with the establishment of a Regional Cleaner Production Centre, RCPC, for the Mediterranean and Black Sea international network for cleaner production are:

- * To assist in the establishment of National Focal Points for Cleaner Production, NFP's, in each participating country.
- * To identify and review on-going cleaner production activities in the region and find future potential applications of cleaner production technology for possible use as demonstration plants to promote the concept of cleaner production. Furthermore specific industrial sectors of vital importance throughout the region should be identified.
- * To coordinate the activities between established and new NFP's in the Region around the Mediterranean and Black Sea Basins.
- * To promote the cleaner production concept through collection and dissemination of information.
- * To initiate and promote feasibility studies related to cleaner production.
- * To coordinate training programmes in cleaner production techniques.
- * To identify possible funding sources and make funds available for financing of demonstration projects for cleaner production in the region.
- * To initiate cooperation and coordination with other international programmes that are active in the Region.

5.2 Potential demonstration projects

The second objective above "To identify and review on-going cleaner production activities in the region and find future potential applications of cleaner production technology for possible use as demonstration plants to promote the concept of cleaner production. Furthermore specific industrial sectors of vital importance throughout the region should be identified." is crucial for the success of the network and for its financial sustainability.

By using already implemented cleaner production applications as demonstration plants and/or case studies the budget for new activities can be kept down and more resources can be spent for the dissemination of existing information. If suitable existing demonstration plants can be found where the application of cleaner production has led to financial gains for the company, the use of cleaner production can spread as ripples on the water without having to fund too many new demonstration plants. Once the awareness starts growing within the industry that application of cleaner production actually can lead to better production economy, the interest for the concept of environmental protection by prevention rather than remediation will increase and the industries themselves will be ready to invest if a sufficiently short pay-back time can be obtained.

A list of already known potential demonstration projects are found in Annex C, attached. The list contains potential demonstration plants or case studies for textile, tanneries, mining, metal finishing and food industry, all branches of general regional interest for the entire area around the Mediterranean and Black Sea. Obviously each listed example has to be thoroughly examined before deciding if it is suitable as a demonstration plant or not.

5.3 Detailed workplan

A detailed workplan for the Regional Cleaner Production Centre is attached as Annex D. The workplan defines the structure of the RCPC and defines activities required in order to obtain the eight main objectives listed under 5.1.

6. STRUCTURE OF THE NATIONAL FOCAL POINTS, NFP'S

6.1 Main objectives

The main objectives with the establishment of National Focal Points, NFP's, for the member countries of the Mediterranean and Black Sea international network for cleaner production are:

- To promote the cleaner production concept through dissemination of information.
- To organize demonstration projects in industrial establishments.
- To prepare case studies.
- To organize training programmes in cleaner production practices.
- To identify the needs for advisory services to industry, and ensure their provision to companies interested in applying the cleaner production approach.
- To stimulate applied research on cleaner process technologies and to identify obstacles to their utilization.
- To provide advice to key policy makers, particularly those in the Ministry of Environment and/or similar authorities, on the advantages of incorporating the cleaner production approach into environmental policies.
- To prepare waste audit manuals adopted to the specific country needs and to document local experiences from use of cleaner production technology. The manuals should cover solid and liquid wastes as well as gaseous emissions.

6.2 Preliminary workplan

A preliminary workplan for the National Focal Points, NFP's, is attached as Annex E. The workplan defines the general structure of the NFP's and defines activities required in order to obtain the eight main objectives listed under 6.1.

7. STRUCTURE OF THE NATIONAL CLEANER PRODUCTION CENTRES, NCPC'S

7.1 Comparison between NCPC's and NFP's

In short a National Cleaner Production Centre, NCPC, is an expanded National Focal Point, NFP. In a country with developed cleaner production activities, it may be wise to develop different NFP's for different parts of a country, especially if the country is spread out geographically, or different NFP's for different industrial branches with little in common. Once more than one NFP have been established in a country one of those must coordinate the total country activities, and will therefore be expanded to a NCPC. Each country could thus host several NFP's, but only one NCPC.

7.2 Main objectives

All the main objectives described for the National Focal Point's, NFP's, are identical with the first eight for the National Cleaner Production Center's, that is:

- To promote the cleaner production concept through dissemination of information.
 - To organize demonstration projects in industrial establishments.
 - To prepare case studies.
 - To organize training programmes in cleaner production practices.
 - To identify the needs for advisory services to industry, and ensure their provision to companies interested in applying the cleaner production approach.
 - To stimulate applied research on cleaner process technologies and to identify obstacles to their utilization.
 - To provide advice to key policy makers, particularly those in the Ministry of Environment and/or similar authorities, on the advantages of incorporating the cleaner production approach into environmental policies.
- To prepare waste audit manuals adopted to the specific country needs and to document local experiences from use of cleaner production technology. The manuals should cover solid and liquid wastes as well as gaseous emissions.

In addition to these objectives, the following two objectives will be required for the National Cleaner Production Centre's, NCPC's, to be established in some of the more active countries of the Mediterranean and Black Sea international network for cleaner production:

- Coordinate the activities for the different National Focal Point's of the country.
- Administrate all the country contacts with the Regional Cleaner Production Centre, RCPC.

ANNEX VI

CALENDAR OF MEETINGS ORGANIZED IN THE FRAMEWORK OF THE
MEDITERRANEAN ACTION PLAN

Meeting	Date, Place	Organizer & co-sponsor (co-sponsor in brackets)	Responsible Officer	Report Status
	<u>1996</u>			
Expert Meeting on ICAM, GIS, EIA and CCA for CAMP Fuka- Matrouh	8-10 January Split	PAP/RAC (UNEP-MEDU)	I. Trumbic	to be issued by PAP/RAC
Inter-Agency Advisory Committee for MED POL	9-12 Jan. Athens	UNEP-MEDU	L. Jeftic F.S. Civili	to be issued by MEDU
METAP-MAP (Blue Plan) Workshop on Environmental Monitoring and Performance Indicators	12-14 Jan. Damascus	METAP- MAP(BP)	L. Chabason* A. Hoballah*	to be issued by BP/RAC
Meeting of MEDU and RAC Directors	16-18 January Rome	UNEP-MEDU (RAC/ERS)	L. Chabason*	UNEP(OCA)/ MED WG.105/2
National Training Course on the Application of EIA	January Tirana	PAP/RAC (UNEP-MEDU)	A. Baric*	to be issued by PAP/RAC
National Training Course on GIS in Coastal Zone Management	January Split	PAP/RAC	T. Radelja	to be issued by PAP/RAC
Expert Meeting for the Final Editing of the Guidelines for Mapping of Erosion Processes in Mediterranean Coastal Areas	January Rome	PAP/RAC	I. Trumbic	to be issued by PAP/RAC
4th FAO/UNEP Sub-regional Workshop on the Monitoring of Chemical Contaminants for Trends (in French)	26-29 Feb. Rabat	FAO (UNEP-MEDU)	G.Gabrielides*	FIR/MEDPOL/ MAR/5

Meeting	Date, Place	Organizer & co-sponsor (co-sponsor in brackets)	Responsible Officer	Report Status
Experts Meeting for Sfax CAMP	End of February Varese	RAC/ERS (UNEP/MEDU)	M. Viel	to be issued by RAC/ERS
Meeting of Experts on LBS	3-4 March Siracusa	UNEP-MEDU (ITALY)	L. Jeftic* F.S. Civili*	to be issued by MEDU
Conference of Plenipotentiaries on LBS	6-7 March Siracusa	UNEP-MEDU (ITALY)	L. Jeftic* F.S. Civili*	to be issued by MEDU
Meeting of MEDPOL Coordinators	18-22 March Athens	UNEP-MEDU	L. Jeftic F.S. Civili	to be issued by MEDU
Meeting of Experts for the Elaboration of Common Criteria for the Choise of Protected Marine and Coastal Areas that could be included in the SPAMI List	22-23 March Tunis	SPA/RAC (UNEP-MEDU)	C. Rais M. Barbieri I. Dharat*	to be issued by SPA/RAC
Meeting of National Focal Points for SPA/RAC	25-27 March Tunis	SPA/RAC (UNEP-MEDU)	M. Saied I. Dharat*	to be issued by SPA/RAC
National Training course on Application of Environmental Sound Approach to Planning and Development of Tourism	March Cairo	PAP/RAC (UNEP-MEDU)	I. Trumbic*	to be issued by PAP/RAC
Regional Training Course on Solid Waste Management	March Croatia	PAP/RAC (UNEP-MEDU)	S. Tedeschi	to be issued by PAP/RAC
Regional Training Course on Reuse of Urban Waste Waters	March Israel	PAP/RAC (UNEP-MEDU)	S. Tedeschi*	to be issued by PAP/RAC

Meeting	Date, Place	Organizer & co-sponsor (co-sponsor in brackets)	Responsible Officer	Report Status
Meeting of the Bureau (BUR/48)	1-2 April Cairo	UNEP-MEDU (EGYPT)	L. Chabason* I. Dharat*	to be issued by MEDU
Meeting for the Preparation of Guidelines for Sustainable Development	Malta 22-26 April	MALTA (UNEP-MEDU)	F.S. Civili* I. Trumbic* A. Hoballah*	to be issued by MALTA
Meeting of Mediterranean Experts on Coastal Management, including Land Policies	26-27 April Santorini	UNEP-MEDU/ GREECE	L. Chabason* G. Kamizoulis*	to be issued by MEDU
Working Session Hypothesis and Scenarios CAMP Fuka-Matruh	April Cairo	BLUE PLAN (UNEP-MEDU)	A. Hoballah	to be issued by BP/RAC
Expert Meeting to Finalize Guidelines for Measurement of Soil Erosion	April Barcelona	PAP/RAC (UNEP-MEDU)	I. Trumbic*	to be issued by PAP/RAC
Meeting of MAP National Focal Points	6-10 May Athens	UNEP-MEDU	L. Jeftic I. Dharat	to be issued by MEDU
Final Presentation Conference on Results of CAMP Rhodes (closing of the project)	14-15 May Rhodes	UNEP-MEDU (GREECE)	I. Dharat*	to be issued by MEDU
Meeting of Experts on the Preparation of Guidelines for the Handling of Sewage Sludge and Dredging Spoils	20-24 May Valencia	UNEP-MEDU (SPAIN)	F.S. Civili*	to be issued by MEDU

Meeting	Date, Place	Organizer & co-sponsor (co-sponsor in brackets)	Responsible Officer	Report Status
Workshop to present Guidelines for Monitoring of Ercsion Processes	May Malaga	PAP/RAC (ICONA) (UNEP-MEDU)	I. Trumbic*	to be issued by PAP/RAC
Working Session Hypothesis and Scenarios CAMP Albania	May Tirana	BLUE PLAN (UNEP-MEDU)	A. Hoballah*	to be issued by BP/RAC
Working Group on Environment Statistics and Indicators	June Sophia Antipolis	BLUE PLAN (UNEP-MEDU)	A. Hoballah J-P Giraud	to be issued by BP/RAC
Regional Training Course on Crisis Management	June Malta	REMPEC	J-C Sainlos D. Domovic S. Micallef	to be issued by REMPEC
Extraordinary Meeting of the Contracting Parties	1-4 July Montpellier	UNEP-MEDU (FRANCE)	L. Chabason* F.S. Civili*	to be issued by MEDU
Final Presentation Conference for Fuka-Matrouh CAMP (closing of the project)	September Matrouh (tentative)	UNEP-MEDU (EGYPT)	I. Dharat*	to be issued by MEDU
First Meeting of Legal and Technical Experts on Liability and Campensation	8-11 October Athens	UNEP-MEDU	I. Dharat*	to be issued by MEDU
Experts Meeting on Toxic Reduction in the Mediterranean Sea	2-4 October Marseille	UNEP-IEO (UNEP-MEDU) (FRANCE)	L. Chabason* G. Kamizoulis*	to be issued by IEO and MEDU
Regional Workshop on Applied Systemic and Prospective Tools	Oct./Nov. Turkey or Egypt	BLUE PLAN (UNEP-MEDU)	A. Hoballah*	tobe issued by BP/RAC

Meeting	Date, Place	Organizer & co-sponsor (co-sponsor in brackets)	Responsible Officer	Report Status
First Meeting of the Mediterranean Commission on Sustainable Development (MCSD)	Oct./Nov. France/ Morocco (tentative)	UNEP-MEDU	L. Chabason* I. Dharat*	to be issued by MEDU
Meeting of the Bureau (BUR/49)	Oct./Nov. (tentative)	UNEP-MEDU	L. Chabason I. Dharat	to be issued by MEDU
Workshop/Experts Meeting on Mediterranean Sustainable Development Indicators	November (tentative)	Blue Plan (UNEP-MEDU)	A. Hoballah	to be issued by BP/RAC
International Seminar on "Transports and Sustainable Development"	December Sophia Antipolis	BLUE PLAN (UNEP-MEDU)	A. Hoballah* E. Coudert	to be issued by BP/RAC
Meeting of Legal and Technical Experts on Hazardous Wastes	September (tentative) Izmir	UNEP-MEDU/ TURKEY	L. Chabason* I. Dharat*	to be issued by MEDU
Conference of Plenipotentiaries on Hazardous Wastes	September (tentative) Izmir	UNEP-MEDU	L. Chabason* I. Dharat*	to be issued by MEDU

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