

# United Nations Environment Programme Regional Activity Centre for Cleaner Production Mediterranean Action Plan

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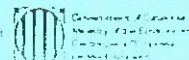
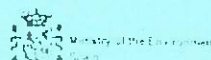
Third National Focal Points Meeting  
Barcelona, 22-23 March 2001

UNEP(DEC)/MED WG.182/4

23 March 2001

Original: English

## ANNEX COUNTRY STATEMENTS





CROATIA



## Cleaner Production in Croatia

Marijan Host, Croatian Cleaner Production Centre

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Barcelona, March 2001

## CP in CROATIA - HISTORY

- 1996 - APO Project: CP in Industry
- Roundtable: Declaration on CP
- 1997 - UNIDO Project: "Capacity Building for Cleaner Production" in Croatia
- 1997 - 1999 Training & demonstration projects
- 2000 - Establishment of Croatian CPC
- 2000 - CP Regional project: Osijek-Baranja county
- 2001 - Project: From CP to EMS (ISO 14001): TPP
- UNIDO: TEST Project, Danube

## UNIDO PROJECT

Capacity building in CP (1997-1999)

### MAIN OUTPUTS:

- 58 LOCAL PROFESSIONALS TRAINED IN CP AND EM
- 21 DEMONSTRATION PROJECTS IMPLEMENTED IN 18 INDUSTRIAL COMPANIES

## PROJECT OUTPUTS

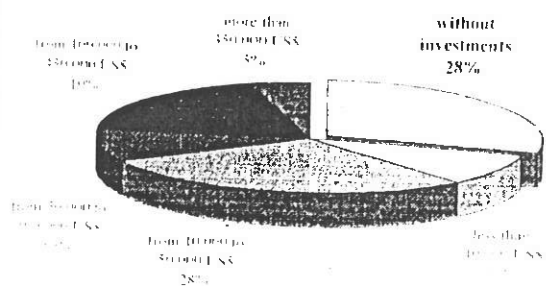
### ENVIRONMENTAL BENEFITS:

|                                      |                             |
|--------------------------------------|-----------------------------|
| • SAVINGS OF FRESH WATER             | 2 370 000 m <sup>3</sup> /y |
| • SAVINGS OF RAW MATERIALS           | 1 564 t/y                   |
| • REDUCTION OF WASTE WATER           | 2 400 000 m <sup>3</sup> /y |
| • REDUCTION OF WASTEWATER LOAD (COD) | 54,6 tO <sub>2</sub> /y     |
| • REDUCTION OF AIR EMISSIONS         | 33,2 t/y                    |
| • REDUCTION OF SOLID WASTE           | 16 549 t/y                  |

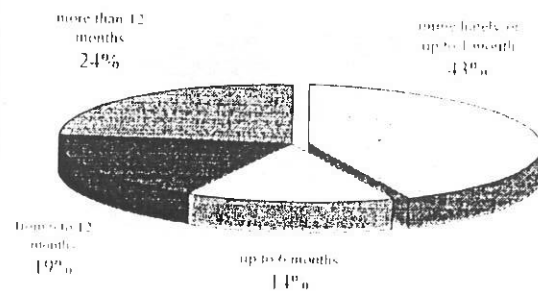
### ECONOMIC EFFECTS:

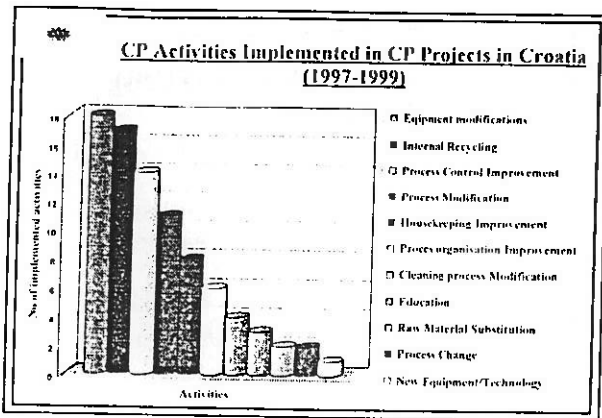
|            |                  |
|------------|------------------|
| • SAVINGS: | 3 890 000 US\$/y |
|------------|------------------|

## Range of Investments for CP Projects in Croatia (1997-1999)



## Payback Periods for CP Projects in Croatia (1997-1999)





### CLEANER PRODUCTION IN OSIJEK - BARANJA COUNTY

*Financing: EcoLinks Challenge Grant (US.AID)*

**Project Leader:** Croatian Chamber of Commerce

**PROJECT MAIN GOALS:**

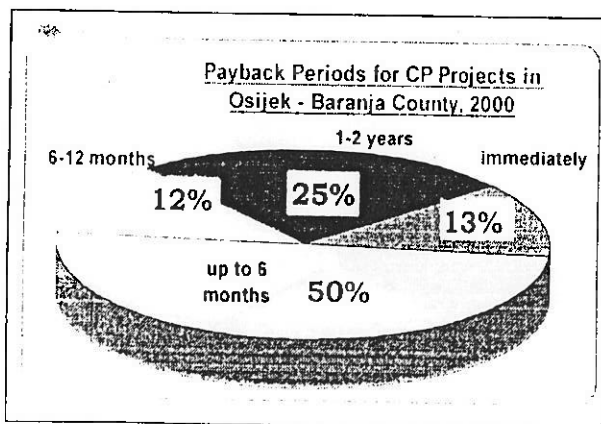
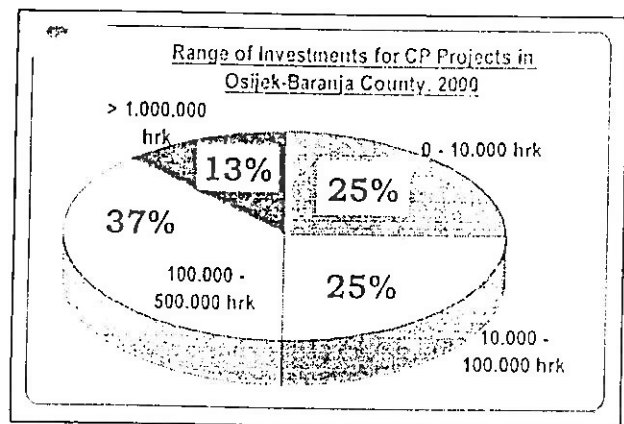
- CP capacity development in Osijek - Baranja County
- introduction of CP and EMS in 6 companies
- integration of CP Strategy in Local Environmental Policy
- start the process of Local Agenda 21
- reconstruction of industry in cost-effective way

### TOTAL RESULTS OF 8 CP PROJECTS IN OSIJEK-BARANJA COUNTY, 2000

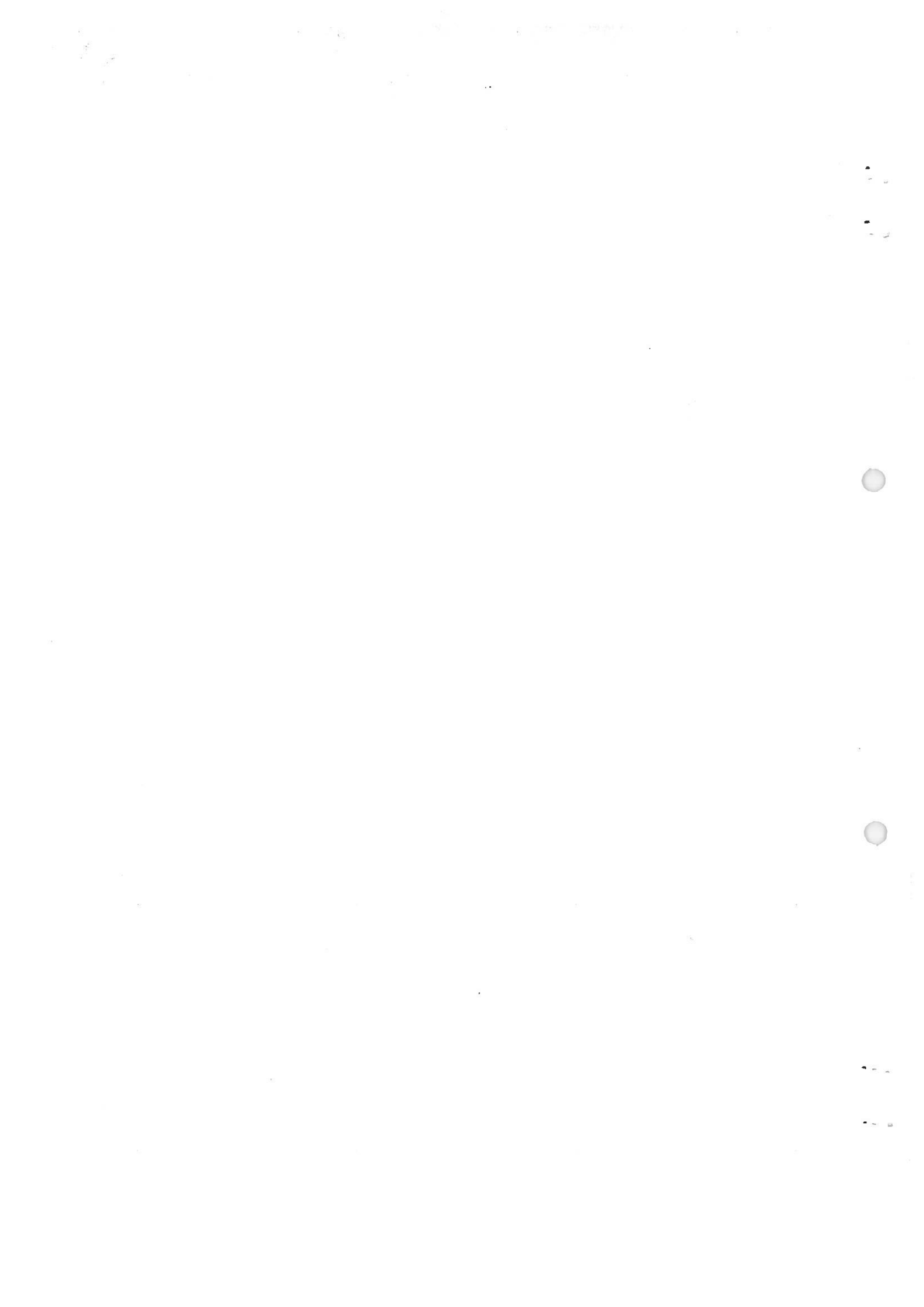
**Environmental benefits**

- Reduction of waste-waters: 1 412 000 m<sup>3</sup>/per year
- Reduction of air emissions: 351 t/per year
- Reduction of industrial waste: 72 570 t/per year
- Reduction of hazardous waste: 245 kg/per year
- Fresh water savings: 273.700 m<sup>3</sup>/per year
- Raw & auxiliary materials savings: 40 t/per year
- Savings of fuel gas: 122.340 m<sup>3</sup>/per year

**Total financial savings:** 1,15 mil. US\$ per year

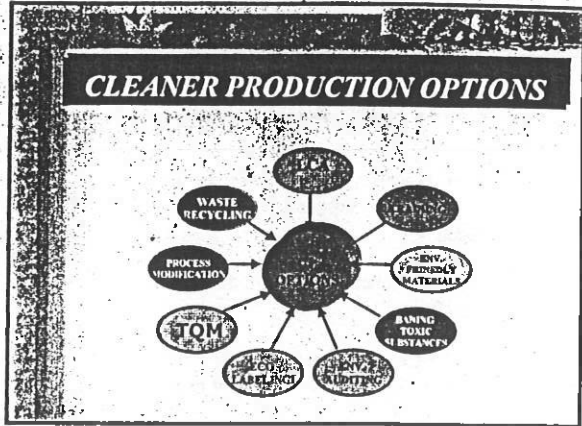


EGYPT

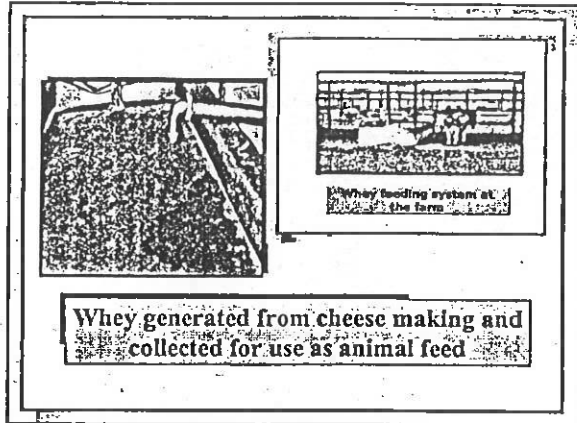




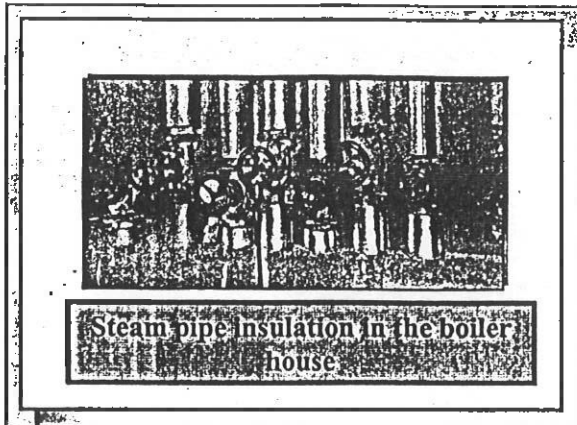
# CLEANER PRODUCTION IN THE EGYPTIAN INDUSTRY



## REPROCESSING OF INDUSTRIAL WASTES

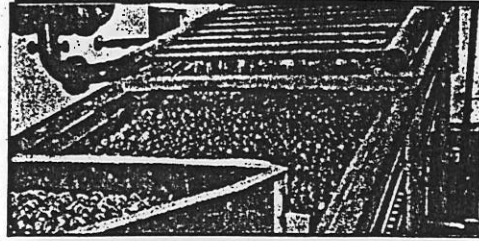


## WATER AND ENERGY CONSERVATION IN FOOD CANNING

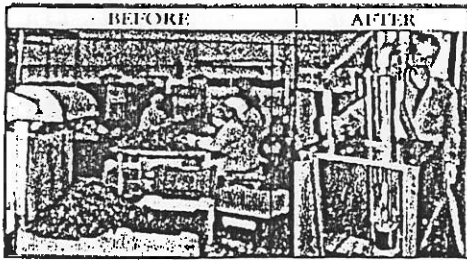


### *Water Saving Measures*

- Installation of On/off spray nozzles on Hose allowed flow only when required. Water savings were 9,000 m<sup>3</sup>/y.
- Improving Water Collection on the Juice Line saved 24,000 m<sup>3</sup>/y.
- Installations of a Cooling Tower for the Bottled Juice Line saved water at a rate of 86,400 m<sup>3</sup>/y.



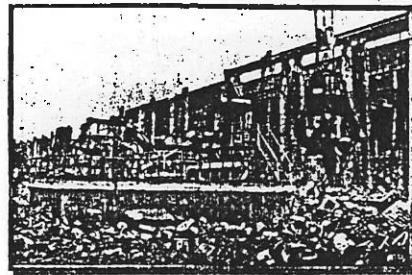
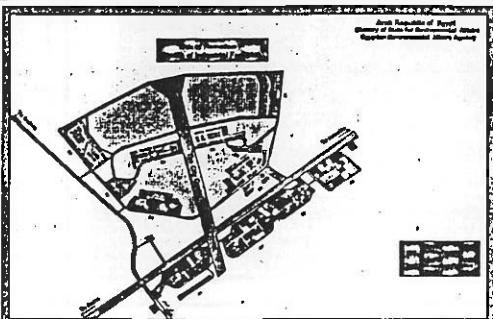
**Modified conveyors reduced wastage of raw materials and products**



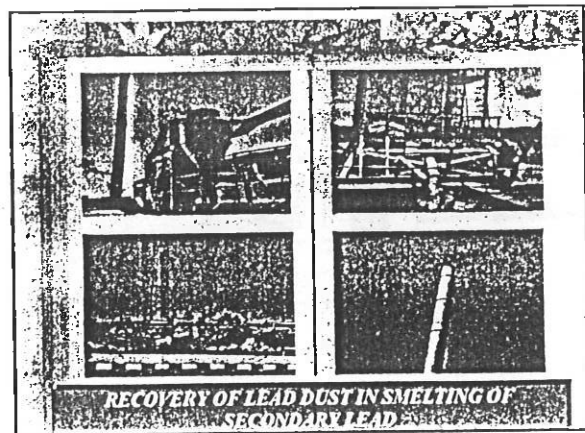
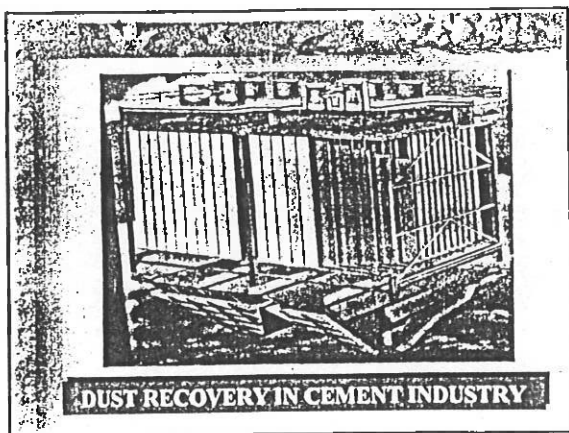
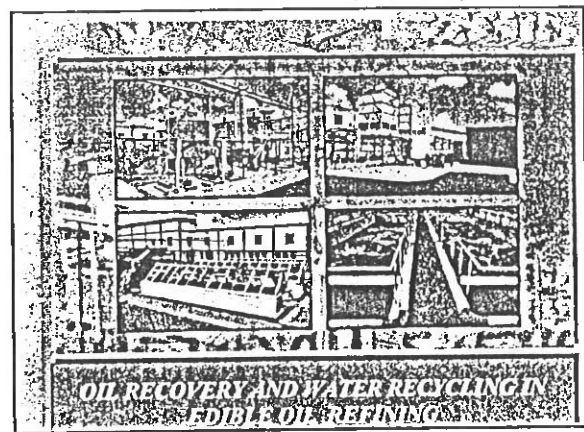
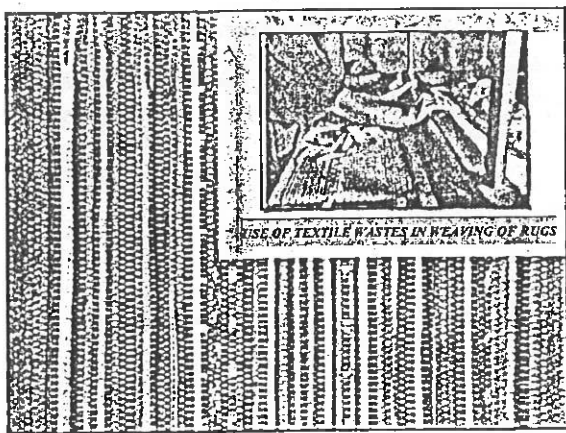
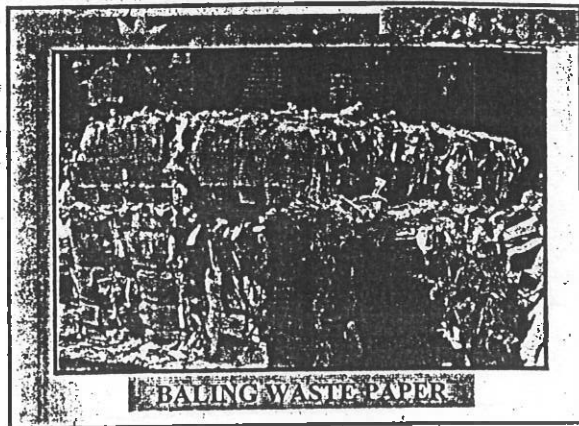
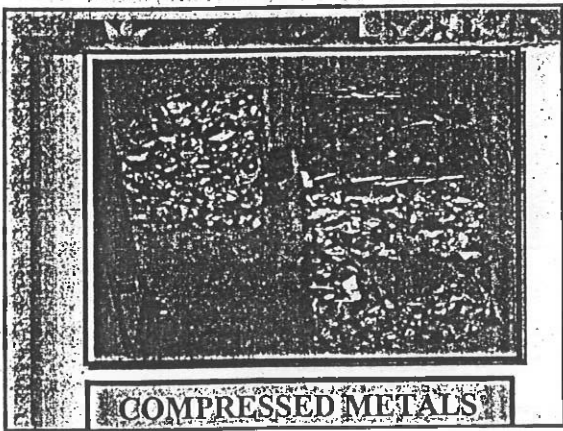
**Semi-automatic vegetable paste packing eliminated handling losses**

**CLEANER PRODUCTION  
IN  
NEW INDUSTRIAL CITIES**

### **Geographic Information System of IOR**



**REUSE OF IRON SCRAP**



# INNOVATIVE CLEANER PRODUCTION TECHNOLOGIES

### GAS PHASE HEAT TREATMENT OF METALS

The hardening and carbonizing of steel are heat treatments that are carried out in baths of molten salts. CP involves gas treatment in fluidized bed of alumina particles. A mixture of air, ammonia, nitrogen, and LPG are used as the fluidizing gas for heat treatment.

| COST SAVING               | US\$/YEAR      |
|---------------------------|----------------|
| Energy                    | 36,000         |
| Salt & maintenance        | \$1,000        |
| <b>TOTAL</b>              | <b>\$7,000</b> |
| <b>CAPITAL INVESTMENT</b> | <b>180,000</b> |
| <b>PAYBACK</b>            | <b>2 years</b> |

### IMPROVED LEATHER TANNING

#### GREEN FLESHING

**BEFORE** → **AFTER**

Conditioned waste or with salt → Green Waste with fat proteins

Limed hides with chemical mordants → Green hides with no chromium added yet

### CHROME REDUCED AND RECYCLING IN LEATHER TANNING

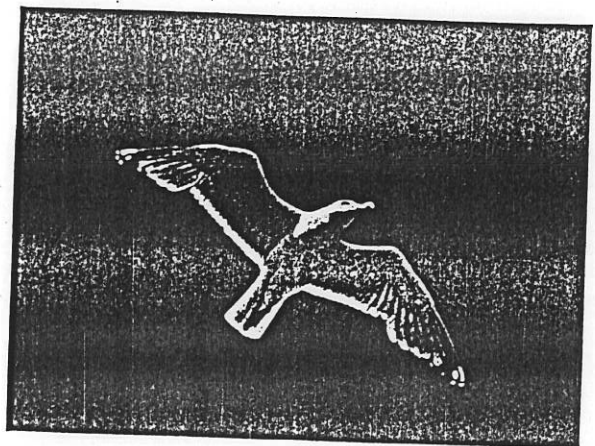
#### ADVANTAGES

- Very little change in production process.
- More consistent product quality.
- Much reduced chromium of effluent waters.

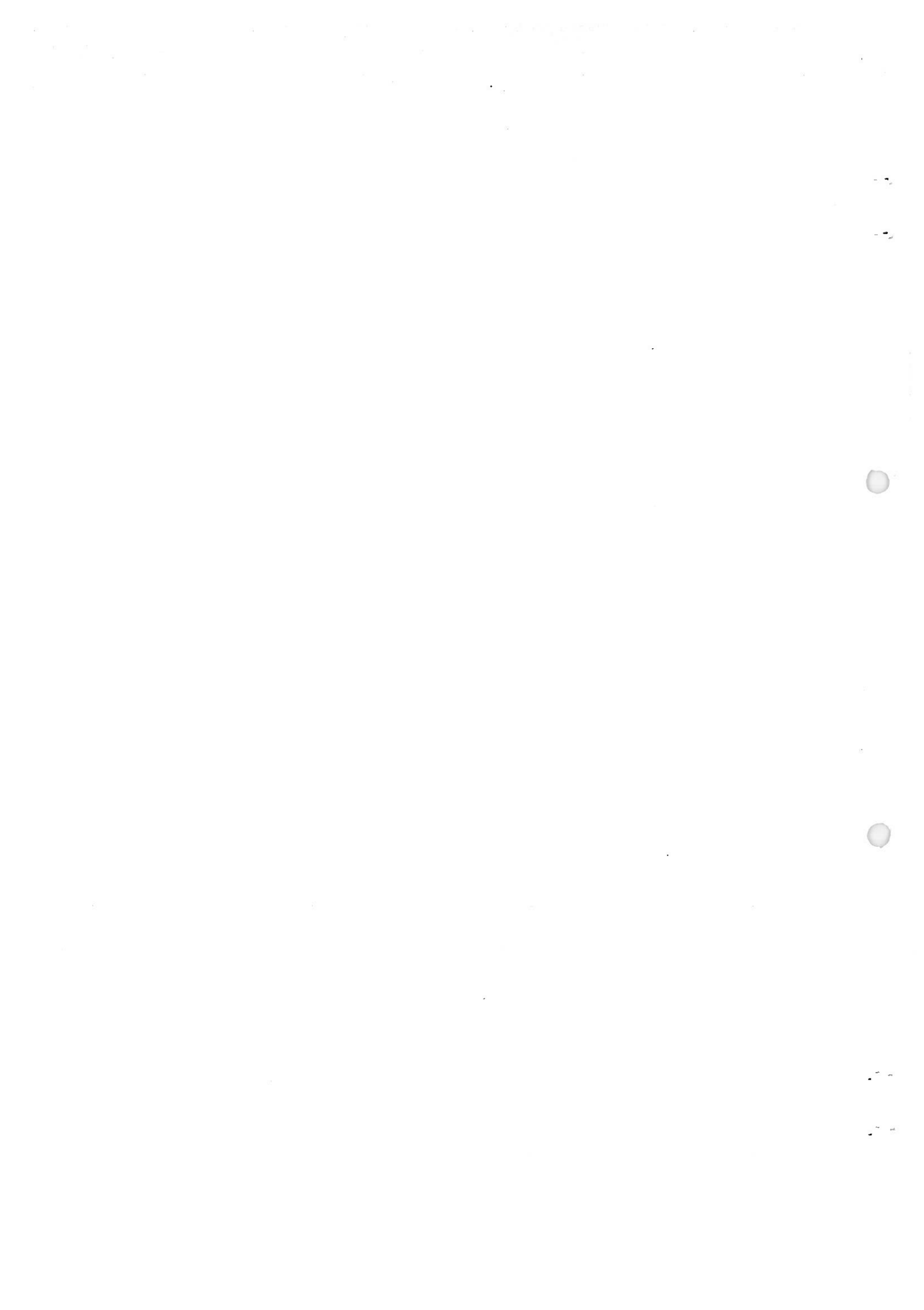
| COST SAVING               | US\$/YEAR        |
|---------------------------|------------------|
| <b>TOTAL SAVING</b>       | <b>43,550</b>    |
| <b>CAPITAL INVESTMENT</b> | <b>40,000</b>    |
| <b>PAYBACK</b>            | <b>11 months</b> |

**FIVE STEPS TO PROFIT IN CHROMIUM RECYCLING (Back Panel)**

### Rinse Rationalization in Metal Plating



ISRAEL



**State of Israel**  
**Ministry of the Environment**

**Country Statement**  
**Third Meeting of RAC/CP National Focal Points**  
**Barcelona, 22-23 March 2001**

Cleaner Production Activities in Israel since last NFP meeting focused on

- Establishing a CP Centre
- Encouraging reduction at source
- Promoting ISO 14000 certification

The Cleaner Production Centre of Israel was established in October 2000. It is a joint project of the Ministry of the Environment and the Manufacturers' Association and its objectives include

- Enhancing awareness to the Cleaner Production process, its significance and its benefits;
- Accumulation and dissemination of information and knowledge on CP issues;
- Initiation of projects incorporating CP principles by local industry.

First, a board of directors was elected comprising of officials from the Ministry and the Association. Then an advisory committee was formed to formulate work plans and monitor progress. The Ministry of Industry and Commerce is represented in the committee. It was decided that the Manufacturers' Association headquarters in Tel Aviv should be the home of the CP Centre. One full-time employee mans the CPC. Three others, namely, Dr M. Sela and Mr. R. Gilead of the Ministry and Mr. D. Bassel of the Association, devote some of their time to assist, direct and coordinate activities.

Israel is plagued with typical inherent difficulties:

- Scarcity of potable water;
- Salinisation of aquifers and soil by irrigation with treated effluents;
- Very limited land reserves and a shortage of space for treatment and disposal of solid waste;
- Air pollution (mainly SO<sub>x</sub> and SO<sub>x</sub>).

The main areas of activity within the CPC are dictated by the above problems. The Centre will concentrate on:

- Development of no-salt and low-salt processes,
- Use of treated urban sewage in industry,

- Re-use of treated industrial effluents,
- Use of industrial waste heat and
- Reduction of non-hazardous waste at source.

An initial US\$100,000 was allocated for current activities and further finances should come from manufacturers benefiting from CPC activities.

The first action undertaken by the CPC was to retain a consultant to suggest to industry tailored solutions on solid waste reduction at source and utilization of residual (waste) heat.

The CPC's Internet site is in its initial stages and a symposium will be held on the highlights of CPC activity this year.

The Board of Directors outlined the main principles for CPC activity:

- Adoption of UNIDO/UNEP programme for CPC
- Combining economical and environmental benefits
- Adoption of CPC Barcelona methods

Beside its activities within the Center the Ministry of the Environment promotes cleaner production by other means. Adoption of ISO 14000, the voluntary standard for environmental management, entails adoption of cleaner production technologies. Acknowledging the linkage between the two, the Ministry has decided to reward financially those manufacturers applying for ISO 14000 certification. During the year 2000 the Ministry granted thirteen manufacturers with US\$8000-12,000 each, which constitute about half of the cost of certification. Five of these manufacturers have already been certified and the rest will do so before the end of 2001. The number of enterprises with ISO 14000 has risen during the past two years from 16 to 51.

The Ministry as also undertaken to introduce local government to ISO 14000 so as to enable municipalities to adopt environmental management methods for the benefit of the population as well as to formulate policies that will induce local manufacturers to apply environmental management within their systems. Three municipalities and one industrial park were granted US\$40,000 each in 2000.

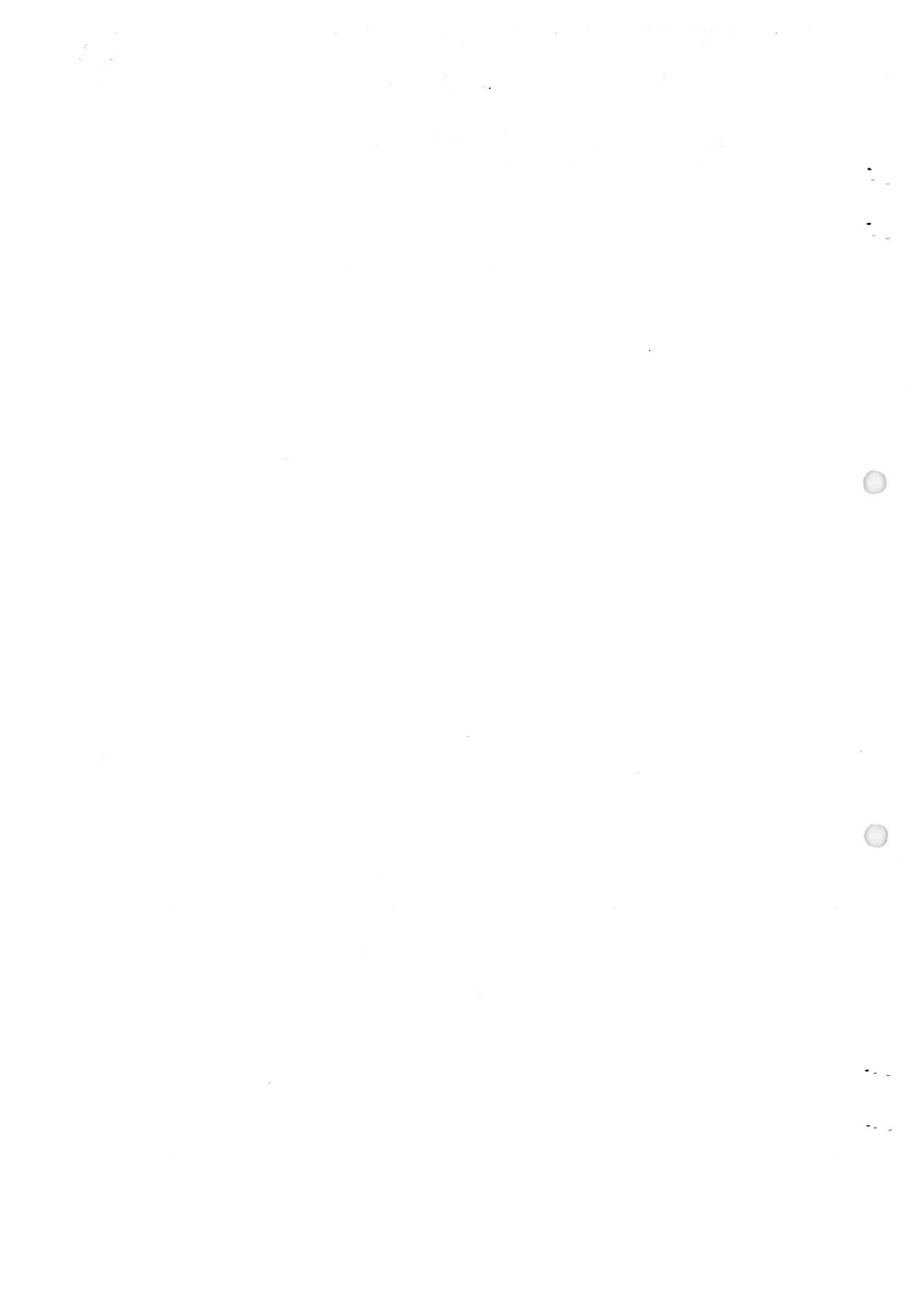
The Hazardous Substances at the Ministry of the Environment has been financing for the past two years projects for the minimization of hazwaste generation. Three manufacturers were received grants during 2000. Two case studies are of particular interest: Agan and Deshanim.



Agan manufactures crop protection chemicals. They have set up a DCM recovery unit at the cost of US\$360,000 to process some 300 tons yearly. At DCM going prices at the time the project was approved Agan expected to regain the investment within less than two years. While recovering DCM Agan overcame a serious air pollution problem and is now able to comply with the very stringent emission standard of 20 mg/m<sup>3</sup>. This project illustrates the previously mentioned principle of solving an environmental problem while improving manufacturing processes and showing savings.

Deshanim manufactures fertilizers. A simple modification of their process resulted in a significant reduction of one thousand tons per year of solid waste while saving on energy and on hazardous materials needed for neutralization. Investing US\$180,000 Deshannim is saving US\$260,000 each year.

In 2001 the Hazardous Substances Division approved the distribution of US\$130,000 to ten manufacturers involved in projects devoted to both reduction at source and end-of-pipe reduction. It is the intention of the Ministry to turn these activities over to the CP Centre so that all future projects funded will reflect the cause of cleaner production, namely, process modification and treatment at the source.



ITALY



**UNEP/MAP - Regional Activity Centre for Cleaner Production (RAC/CP)  
Third National Focal Point Meeting, Barcelona-Spain, 22-23 March 2001**

Since the last RAC/CP NFP meeting held in 1999, several actions have been carried out in Italy to increase the awareness of concepts and methods related to Cleaner Production.

In collaboration with UNEP-DTIE and ECOMED, a high level ceremony was organized in Rome in July 2000 for the signature of the "International Declaration on Cleaner Production", which was signed by the Italian Minister of the Environment, the Mayor of Rome, the Chairman of ANPA and several high-level representatives from other Ministries, NGOs and industrial associations. The ceremony was followed by the 2<sup>nd</sup> High Level Seminar on Cleaner Production in the Mediterranean Region, co-sponsored by ANPA, ECOMED and UNEP-DTIE under the auspices of the Italian Ministry of the Environment. It was attended by participants from most Mediterranean countries from the Northern and Southern shores. The 2<sup>nd</sup> Regional Report on Cleaner Production in the Mediterranean Region was presented, including real-life case studies. Emerging issues, strategies and means to move forward were discussed.

These activities have contributed to increase information exchange and knowledge among a large spectrum of stakeholders and have stimulated new initiatives to gain better understanding of CP related activities also at the regional/local level and by specific industrial sectors/operators.

Italy has also appreciated the brainstorming workshop organized by RAC/CP last fall on the planning, management and legislative tools for improving CP as well as the more specific meeting on the Food Preserving Industry. Italian participants, respectively from ANPA and from the relevant industrial association considered the meeting well organized and fruitful.

Much work is therefore carried out in Italy in cleaner production, as a result of all these actions. Much more is however being done, as a result of Italian programmes and activities in response to EU initiatives and directives such as the Integrated Pollution Prevention Control Directive (IPPC), the Eco-Management and Audit Scheme (EMAS), the Integrated Product Policy (IPP) and Ecolabelling, as well as within informal networks such as IMPEL.

For example, at national level, an Italian Life Cycle Assessment Database has been set up by ANPA with the support of the Polytechnic of Milan containing an inventory of data regarding the main industrial and service processes performed in Italy. Industrial enterprises can use it as an information set for carrying out life cycle inventories of production systems, building environmental performance indicators and introducing environmental soundness in design processes. It can also be a useful tool for industrial associations for supporting their members, particularly SMEs.

Furthermore, to improve the understanding of how to apply the IPPC directive in Italy and in order to provide technical support to the Ministry of the Environment, ANPA is completing a study on 15 major industrial sectors in terms of technological and production trends and on the major needs for pollution prevention measures as well as for selection criteria for best available technologies. It is also carrying out an investigation, through an ad hoc questionnaire, on the level of understanding of cleaner production concepts and practical implementation approaches at the regional and local level in Italy, through the network of Italian regional environment agencies. The investigation will also identify possible case studies of successful experiences and their potential level of replicability in other Italian regions and/or in interested Southern Mediterranean countries.

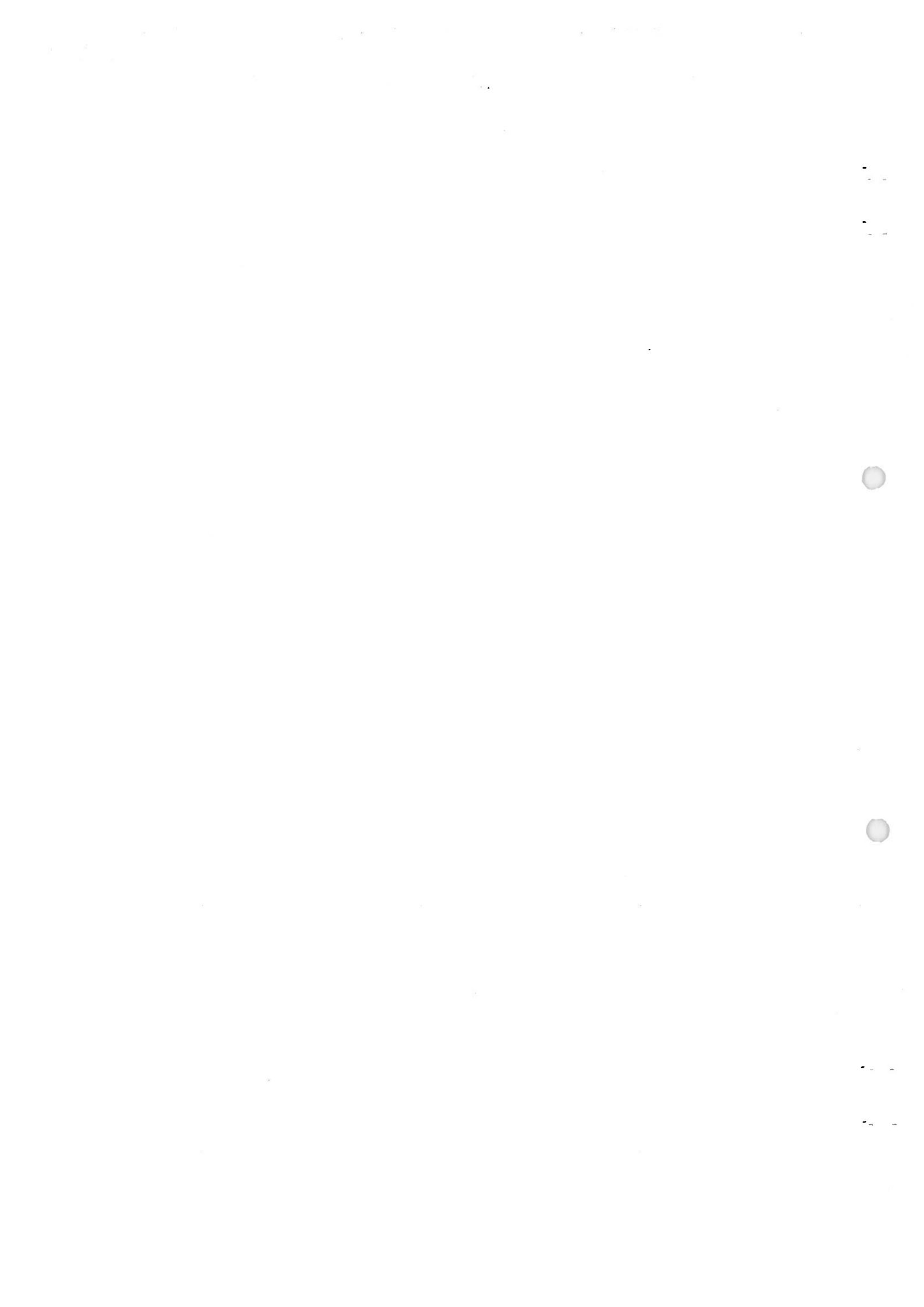
Italy, therefore, suggests the establishment of stronger ties at national and regional level among all these initiatives, also with the view of assisting those Southern Mediterranean countries in the process of joining the EU and, more generally, for the preparation of the environment framework of the Mediterranean Free Trade Area envisaged by 2010.

Italy also considers important for RAC/CP to find synergy with the demand side of cleaner production, i.e., with consumer interests, by inviting representative of consumers associations to the specialized industrial sector meetings.

By strengthening the operational links between cleaner production and consumption patterns, RAC/CP could also make its own work more relevant within the Mediterranean Commission for Sustainable Development, in preparation for Rio+10 next year possibly through and hoc presentation of Mediterranean experiences in cleaner production and consumption at the World Summit on Sustainable Development.




LEBANON





*Handbook of Cleaner Production  
22nd April 2001*


**PROMOTION OF CLEANER  
PRODUCTION TECHNOLOGIES**

Olfat Hamdan  
Lebanese Ministry of Environment 

*1- Tanning Sector (p. 47)*

Previous work

- Auditing
- Pollution Prevention Opportunities
- Cleaner Production Opportunities
- Recommendations to Solve on National Level

RELOCATION 

*1- Tanning Sector (p. 47)*

On- going Activities

- Pre-feasibility Study for Relocation  
(auto-financed by the MoE)

*1- Tanning Sector (p. 47)*

Future Plans

- Secure Funding from UNIDO to Conduct a Detailed Feasibility Study
- Enforcement: Relocation

*2- Good Housekeeping Guide (1 of 2)*

Previous Work

- Tailing GHG to the Lebanese Framework
- Testing the Guide into Two Facilities
- Dissemination Among Various Industrial Facilities

*2- Good Housekeeping Guide (2 of 2)*

Accomplished Activities

- Translating the Guide into Arabic for Wider Dissemination
- Train the Trainer Approach
- Implementing the Guide by the Trainers  
(Following Sector by Sector Approach)

### 2- Good Housekeeping Guide (1 of 3)

#### On-going Activities

- Wider Dissemination
- Implementing the Guide by the Trainers
- Cooperating With Universities and Technical Schools to Involve Them in the Dissemination Strategy
- Training Workshops on Applying & Implementing the Guide

### 3- CP in 2 New Sectors

- Identification of Two Industrial Sectors:  
Olive Oil/ Pulp & Paper
- Establishing an Industrial Database
- Auditing Representative Facilities Per Sector
- Identification of CP & PPO
- Recommendations to Solve on National Level

### 4- Strengthening the Permitting & Auditing System for Industries (1 of 3)

- Financed by: EU
  - Managed by: UNDP
  - Hosted by: MoE
  - Duration: 2 Years
  - Starting Date: 15 February 2000
  - Assigned Team:
    - MoE Focal Point
    - Project Manager
    - Project Assistant
    - Technical Assistant
- e-mail: spasi@moe.gov.lb



### 4- Strengthening the Permitting & Auditing System for Industries (2 of 3)

#### Accomplished Activities

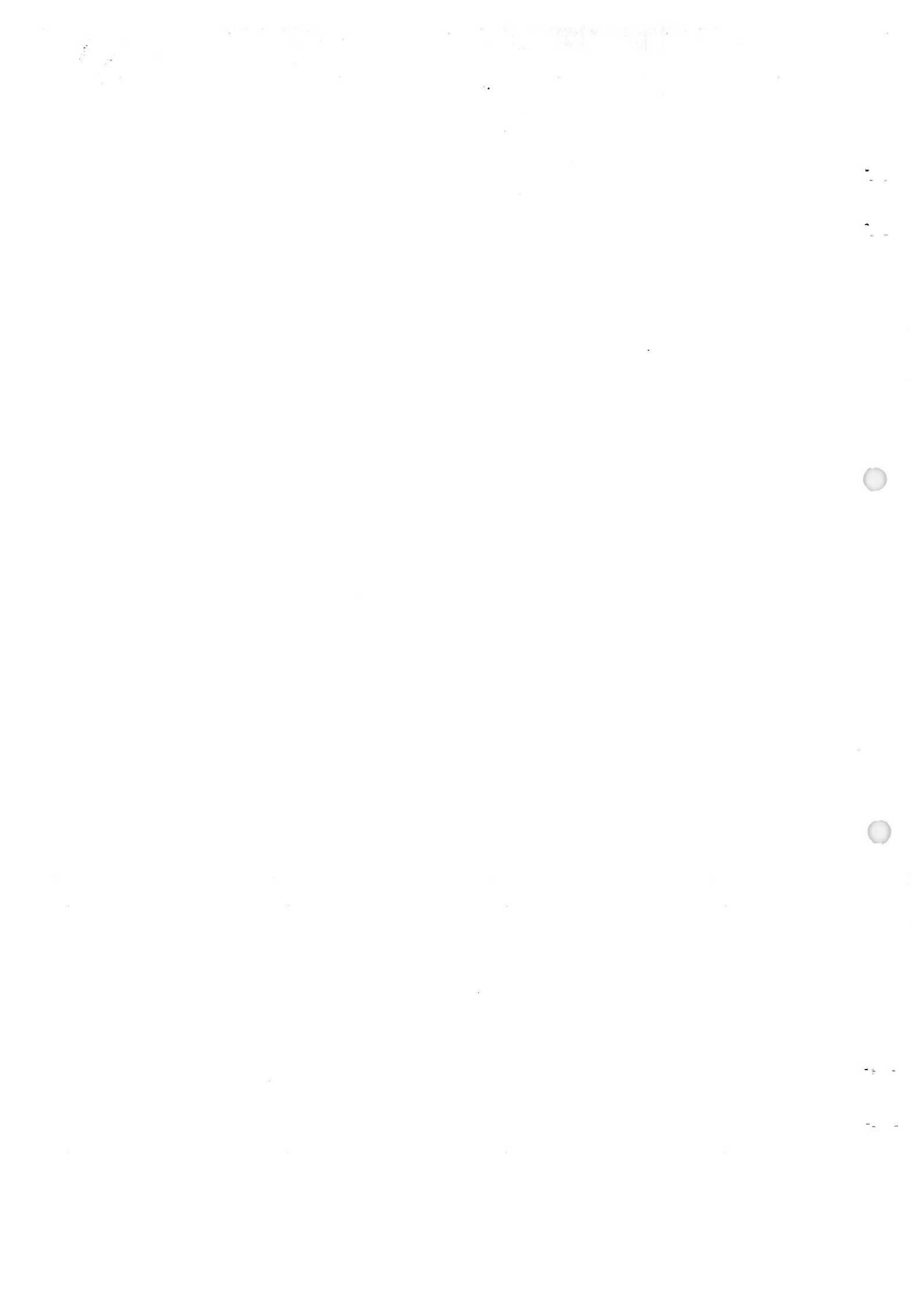
- Development of the National Environmental Auditing Manual (English, Arabic)
- Development of the National Standards for Environmental Quality (Decision 8/1/2001)

### 4- Strengthening the Permitting & Auditing System for Industries (3 of 3)

#### Future Activities

- Development of Monitoring Strategies (Tools & Plans)
- Development of Compliance Action Plan (CAP)
- Case Studies on CAP Per Two Sectors.

MALTA



# Cleaner Technology Centre - Malta

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## Report to the 3rd RAC/CP National Focal Points Meeting Barcelona

22 - 23 March 2001

Anton Pizzuto

## Focus on three main issues

- **Increase awareness** that levels of Industrial energy consumption, waste production and pollution no longer acceptable
- **Inform industry** of the availability of some cleaner alternatives to present processes
- **Consolidate** the role of the CTC as clearing house of information

## Methodology used :

- **Visits**
- **Data collection**
- **Education and training**
- **Dissemination of information**
- **Collaboration with other entities**

# Visits

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- **Visits to manufacturing facilities to discuss with the personnel involved the need to look closely at processes and techniques used and the possibility of modification where necessary and possible (e.g. advice and limited environmental audits)**



# Data collection

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- **Compilation of a comprehensive list of facilities and activities adopting a cleaner production approach for subsequent dissemination.**
- **Surveys to identify and quantify waste streams (e.g. hazardous waste)**

# Education & Training

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- 7 Seminars and Video Fora were organised, the subjects discussed were :
- “The use and phase out of ODSs”
- “Waste Minimisation & Energy Conservation”
- “The Basel Convention”
- “Liquid Waste”

# Education & Training

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- “Harmonisation with EU environmental law for industry”
- “Integrated solid waste management”
- *These seminars provided industry with an opportunity to discuss with local and foreign experts the problems*

# Education & Training

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- Lectures and talks on CP were delivered to:
  - 
  - Trade school students
  - University students in Business, Management and Engineering studies
  - Environmental and other groups

# Dissemination of Information

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- **A small specialised resource section has been set - up**
- **Distribution of information & publications supplied by international entities. (e.g. MedClean)**
- **Provision of a limited advice/consultancy service on pollution prevention**

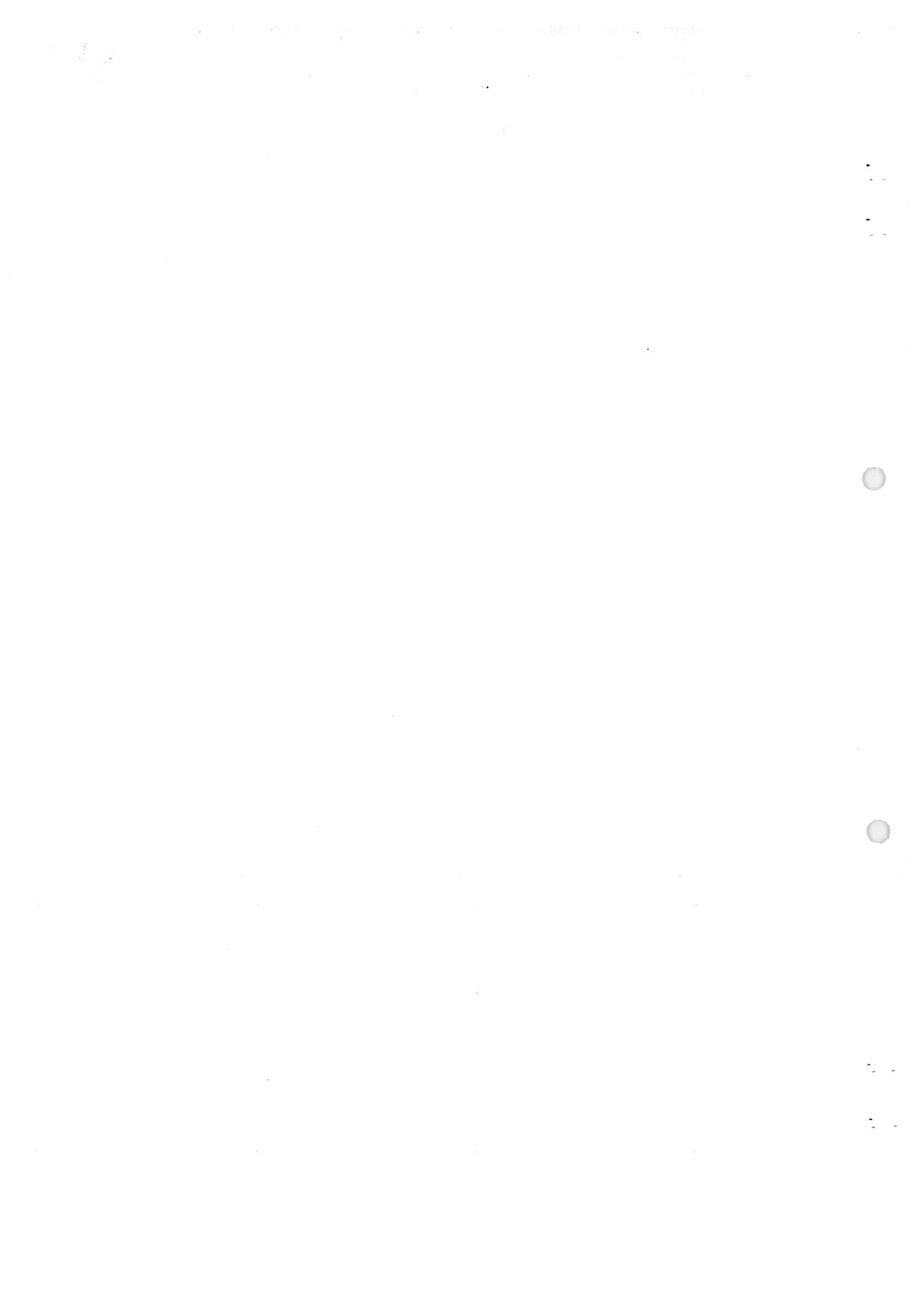
# Collaboration

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- **The Centre collaborates with Industry associations, Govt. Department both at the national and international level**
- **Participation in initiatives leading to the application of cleaner technologies**
- **( e.g. participated in EU/LIFE project on EMAS )**

MOROCCO





**Bilan d'activités réalisées depuis la deuxième réunion des points Focaux tenue les 17 et 18 mai 1999, au CAR, à Barcelone**

- Participation de représentants des secteurs cuir et traitement de surface aux réunions d'experts (tenue en 1999, au CAR, à Barcelone) relative à ces secteurs, par des présentations d'études de cas en matière de production propre à l'échelle de ces secteurs
- Participation à l'atelier de formation sur la méthodologie de diagnostique environnemental des opportunités de minimisation de rejets industriels ; tenue en juin 2000 , au CAR, à Barcelone
- Mise en place du centre marocain de production propre dans le cadre d'un partenariat public-privé, en juin 2000
- Constitution d'un réseau d'experts marocains pour accompagner le Centre marocain de production propre dans la réalisation de son plan d'action en matière de production propre, en décembre 2000
- Organisation de sessions de formation au profit de ce réseau d'experts et des secteurs industriels prioritaires en matière de production propre, en janvier 2001
- Organisation de tables rondes d'experts nationaux et internationaux sur différents thèmes en relation avec la production propre pour s'informer et échanger les expériences dans ce domaine et ce une fois par mois, au siège du Centre Marocain de Production Propre
- Réalisation d'un rapport sur la situation de la production propre au Maroc et participation à la réunion relative à la situation de la production propre au niveau de la méditerranée, tenue en septembre 2000, au CAR, à Barcelone

- **Participation à la réunion d'experts relative à la branche de la conserverie alimentaire, par une présentation sur la situation de la production propre à l'échelle du secteur de l'agro-alimentaire au Maroc et d'une étude de cas en la matière à niveau de la conserverie alimentaire, tenue novembre 2000, au CAR , à Barcelone**
- **Contribution aux publications de bulletins d'information périodiques (CPNews et Medpropre) mettant en valeur les programmes d'activités ainsi que les expériences pilotes réussies en matière de production propre dans la région méditerranéenne**
- **Organisation du premier séminaire national sur la production propre, sous l'égide du Ministère de l'Aménagement du Territoire, de l'Urbanisme, de l'Habitat et de l'Environnement, en Janvier 2001**
- **Réalisation de recherches, par des chercheurs marocains, ayant permis de trouver de solutions adaptées à des problèmes de pollution industrielle (cas du textile, des sucreries et de l'industrie des phosphate )**
- **Appui aux entreprises à travers le Fonds de dépollution industrielle pour mettre en œuvre des actions de prévention et de contrôle de la pollution industrielle**
- **Mise en place d'une station collective de récupération des chrome généré par les tannerie de la zone industrielle de Dokkarat , à Fès**
- **Lancement d'une étude sur le partenariat public-privé dans les domaines des déchets solides industriels et domestiques, de l'assainissement et de la gestion de l'eau, en février 2001**

- Restructuration de la commission environnement de la Confédération Générale des Entreprises du Maroc, en février 2001 et constitution de 3 groupes de travail au sein cde cette commission . il s'agit des groupes suivants : groupe législation, normalisation et communication/groupe partenariat et projet/groupe système de management (qualité, sécurité, santé et environnement)
- Participation aux réunions de la commission du suivi du programme de prévention et lutte contre la pollution industrielle à l'échelle des pays arabes

- \* Réalisation d'une étude de faisabilité pour mettre en place un parc de l'industrie cuir et qui prévoit la mise en place d'une station collective de récupération de chrome. Cette étude qui a été menée par la Fédération des Industries de cuir dans le cadre d'un financement italien.
- \* Organisation d'un atelier de formation des formateurs (26 Avril 2001, à Nohant) sur les techniques d'éco-efficacité et de bonnes pratiques au niveau de l'entreprise. Cet atelier sera suivi d'un voyage d'étude en Allemagne. Cette formation est adressée aux cadres de l'Administration, à la Fédération Marocaine du Conseil et d'Ingénierie, le Centre Marocain de production propre, les Centres techniques techniques (mis en place dans le cadre de la mise à niveau de la PNE/F l'Association Marocaine de l'Assainissement et de l'Eau Potable
- \* Présentation d'une requête dans le cadre du "projet life Pays tiers" relative au renforcement

des capacités en matière d'intégration de la dimension environnementale dans la gestion de l'entreprise. Le projet a été préparé et sera mené dans le cadre d'un partenariat avec la Chambre de Commerce, d'Industrie et de Services de la région de Rabat - Sale; le Centre Marocain de Production Propre; le ~~Ministère~~ Département de l'Environnement la chambre Belgo-Luxembourgeoise de Commerce, d'Industrie et de Services de Casablanca.

**Proposition de nouvelles activités pour l'an 2001 et contribution à l'élaboration d'une stratégie et d'un plan d'actions permettant d'améliorer les relations entre les entreprises de la méditerranée et l'environnement**

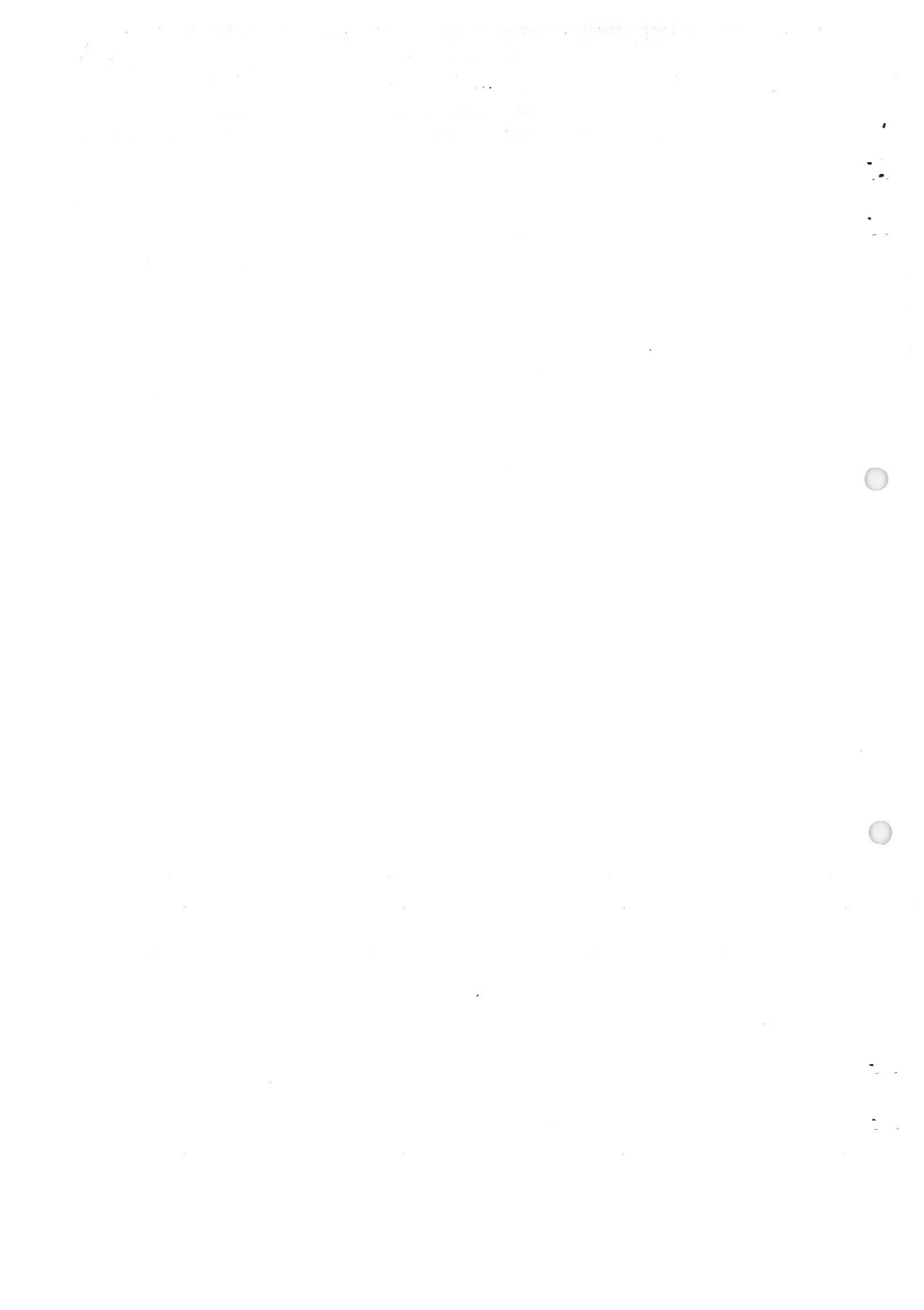
**1. Proposition de nouvelles activités pour l'an 2001**

- examiner les possibilités de mise en œuvre d'actions non réalisées et programmées lors de la deuxième réunion des Points Focaux ; Il s'agit des actions suivantes :
  - organiser une réunion d'experts concernant le secteur du textile et publier les expériences présentées par les différents pays de la méditerranée dans ce domaine
  - élaborer une base de données sur les experts bénévoles intéressés à apporter un appui technique aux initiatives de production propre
  - mettre en œuvre et développer une page Web sur les Points Focaux Nationaux du CAR
  - lancer une publication technique annuelle sur les expériences et les études concernant les initiatives en matière de réduction de rejets industriels et d'adoption de production propre
  - continuer la publication et la diffusion des études de cas Medpropre et CPNews
- activer la mise en œuvre de recommandations issues des différentes réunions d'experts des secteurs suivants (cuir ; traitement de surface ; huilerie ; conserverie alimentaire)
- organiser un atelier d'information et de sensibilisation sur le système bourse de déchets et les opportunités qu'il offre . Cet atelier sera organisé en partenariat avec le Département de l'Environnement du Maroc, le CAR et le centre marocain de production propre , au Maroc

## **2. Contribution à l'élaboration d'un plan d'actions permettant d'améliorer les relations entre les entreprises de la méditerranée et l'environnement**

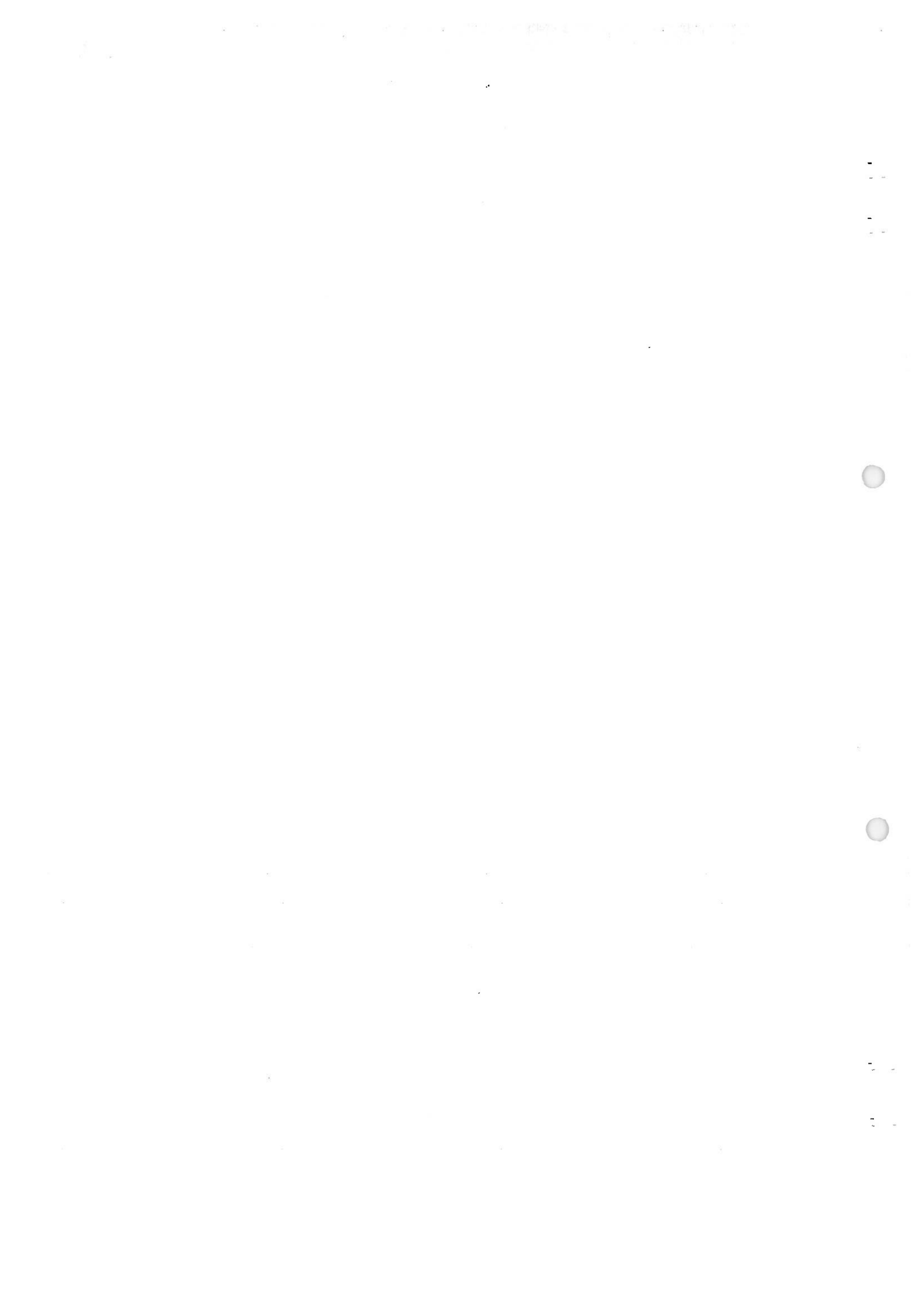
**\* Elaborer un plan d'action permettant d'améliorer la situation de la production propre au niveau de chaque pays de la méditerranée qui prendra en considération les résultats de l'étude réalisée (en septembre 2000) sur la situation de la production propre au niveau de la méditerranée et intégrera les actions suivantes :**


- réaliser une étude de marché en matière de production propre à l'échelle de chaque pays de la méditerranée
- élaborer une base de données sur les réseaux d'experts en matière de production propre au niveau de la méditerranée ou travaillant avec chaque centre de production propre au niveau de cette région
- élaborer des manuels sur les bonnes pratiques au niveau de l'entreprise et spécifiques aux secteurs industriels prioritaires/vernis et peinture ; la fabrication d'acide sulfurique et phosphorique ; les sucreries.....
- organiser des ateliers de formation au profit des experts et des industriels (centres techniques industriels) couplés à des diagnostics environnementaux (DEOM) en matière de bonnes pratiques et de techniques d'eco-efficacité au sein de l'entreprise au niveau des secteurs précités
- former des réseaux d'experts spécifiques aux branches d'activités industriels déjà touchées par les activités du CAR (réunion d'experts...)
- apporter une assistance aux petites et moyennes entreprises pour donner la priorité aux projets de démonstration et les accompagner dans les démarches à suivre pour obtenir le financement auprès des organismes concernés
- développer et appliquer une méthodologie d'actualisation et de diffusion de l'étude sur la situation de la production propre au niveau de chaque pays de la méditerranée. Cette méthodologie doit impliquer les points focaux, les experts du niveau local, les fédérations des différents secteurs industriels concernés et les centres de production propre.






SPAIN







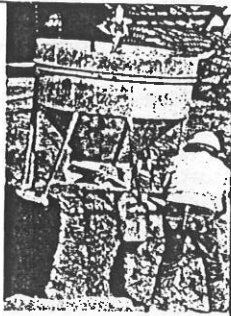
## PROMOTION OF CLEANER PRODUCTION IN SPAIN

MARIA JESUS RODRIGUEZ DE SANCHO  
HEAD OF UNIT  
ENVIRONMENT AND INDUSTRY


MINISTRY OF ENVIRONMENT

## FRAMEWORK

- ✓ Council Directive 96/61/EC on integrated pollution prevention and control (IPPC)
- ✓ aim: to achieve integrated prevention and control of pollution arising from industrial activities



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## SCOPE

**Environmental Scope:**

- ✓ pollution to air, water and land; waste; energy use; accidents; site contamination


**Activities**

- ✓ most large installations: energy metals, minerals, chemicals, waste management. (also SME)

**Installations**

- ✓ new/modified (1999), existing (2007)

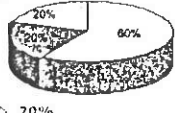
MINISTRY OF ENVIRONMENT




## SCOPE OF IPPC IN SPAIN

- NUMBER OF AFFECTED INSTALLATIONS  
3.000
- MAIN INDUSTRIAL SECTORS

|   |       |
|---|-------|
| Mineral industry, chemical industry                                 | ⇒ 60% |
| Waste management  | ⇒ 20% |
| processing of metals<br>pulp and paper, combustion plants<br>textil | ⇒ 20% |




MINISTRY OF ENVIRONMENT



## WORKING AREAS

- ↪ Administrative provisions necessary to comply with IPPC Directive (31.10.99)
- ↪ Definition of Best Available Techniques in IPPC industrial activities
- ↪ Implementation of EUROPEAN POLLUTANT EMISSION REGISTER (EPER)

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## The BAT Concept

- BEST**
  - ✓ protection of the environment as a whole
- AVAILABLE**
  - ✓ economically and technically viable
  - ✓ cost and advantages
- TECHNIQUES**
  - ✓ technology + design, construction, maintenance, operation and decommissioning

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## BAT Info Exchange



- ✓ Required by Directive (art. 16.2)
- ✓ purpose to support competent authorities
- ✓ published BAT Reference Documents (BREFs) for each sector
- ✓ players: DG XI, IPPCB, IEF, TWGs
- ✓ must be taken into account by competent authorities

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## Contents of European BREFs



- ✓ general information about the sector
- ✓ currently applied techniques
- ✓ present consumption/emission levels
- ✓ candidate BATs: selection and evaluation
- ✓ selection of BATs ("reference techniques")
- ✓ emerging techniques

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## Spanish Technological Studies



- Production and Processing of ferrous metals /Foundries
- Surface treatment of metals and plastic materials
- Cement and lime
- Glass
- Ceramics
- Textile
- Surface treatments using organic solvents

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## INDUSTRIAL SECTORS CARRIED OUT In BAT Info exchange



- Iron and Steel Production
- Cement and lime
- Pulp and paper
- Metals production and processing
- Glass
- Chloralkali
- Cooling Systems
- Textile
- Tanneries

FIRST RESULTS

MINISTRY OF ENVIRONMENT

## PRELIMINARY CONCLUSIONS



- Active participation of industry: raising environmental awareness/opening to public
- industry know new environment legislation in advance
- Spanish industry representatives, working together with representatives from the European industry
- big effort is being made to know current and achievable environmental performance in industrial sectors

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## PRELIMINARY CONCLUSIONS weak points (1)



- Insufficient consideration to the economic aspects when determining BAT (size, price of energy, raw materials)
- Difficulties to define a methodology for cross media aspects assessment at sector and local level

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**PRELIMINARY CONCLUSIONS**  
**weak points (2)**

- concern that the associated emission levels in BREFs will be considered as prescriptive ELVs resulting in a hide transfer of environmental technology
- partial translation of BREFs will not reflect the actual info exchange

**National Guidance notes are needed**

**NATIONAL GUIDANCE NOTES**  
**ON BAT**



**VOLUNTARY AGREEMENTS**  
**GUIDING PRINCIPLES**

- Definition of environmental improvements in the industrial sector, according to current and foreseen environmental legislation
- Quantified environmental objectives
- Fiscal Incentives where appropriate

**VOLUNTARY AGREEMENTS**

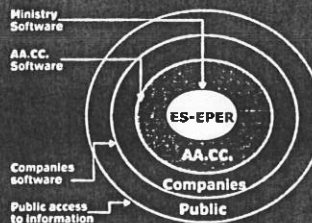
- Chloralkali (1999)
- Pulp and paper (2000)
- Cement and lime (negotiation)
- Glass (negotiation)

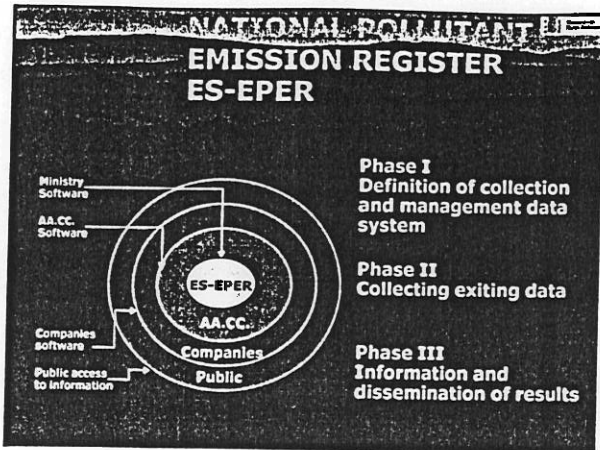
**European Pollutant Emission Register (EPER)**

**GOAL OF EPER**

- To provide publicly accessible and comparable information on emissions of (50) pollutants from (20.000) large facilities
- To inventory emission data on pollutants as required by IPPC Directive (1996)
- To meet the needs for public right-to-know of releases from industry to the environment as agreed in the Aarhus Convention (1998)

**EMISSION REGISTER**  
**ES-EPER**





## INTERNET ADDRESSES



### IPPC DIRECTIVE

- <http://europa.eu.int/comm/environment/ippc/index.htm>

### BATs-BREFs

- <http://eippcb.jrc.es>

### SPANISH TECHNOLOGICAL STUDIES

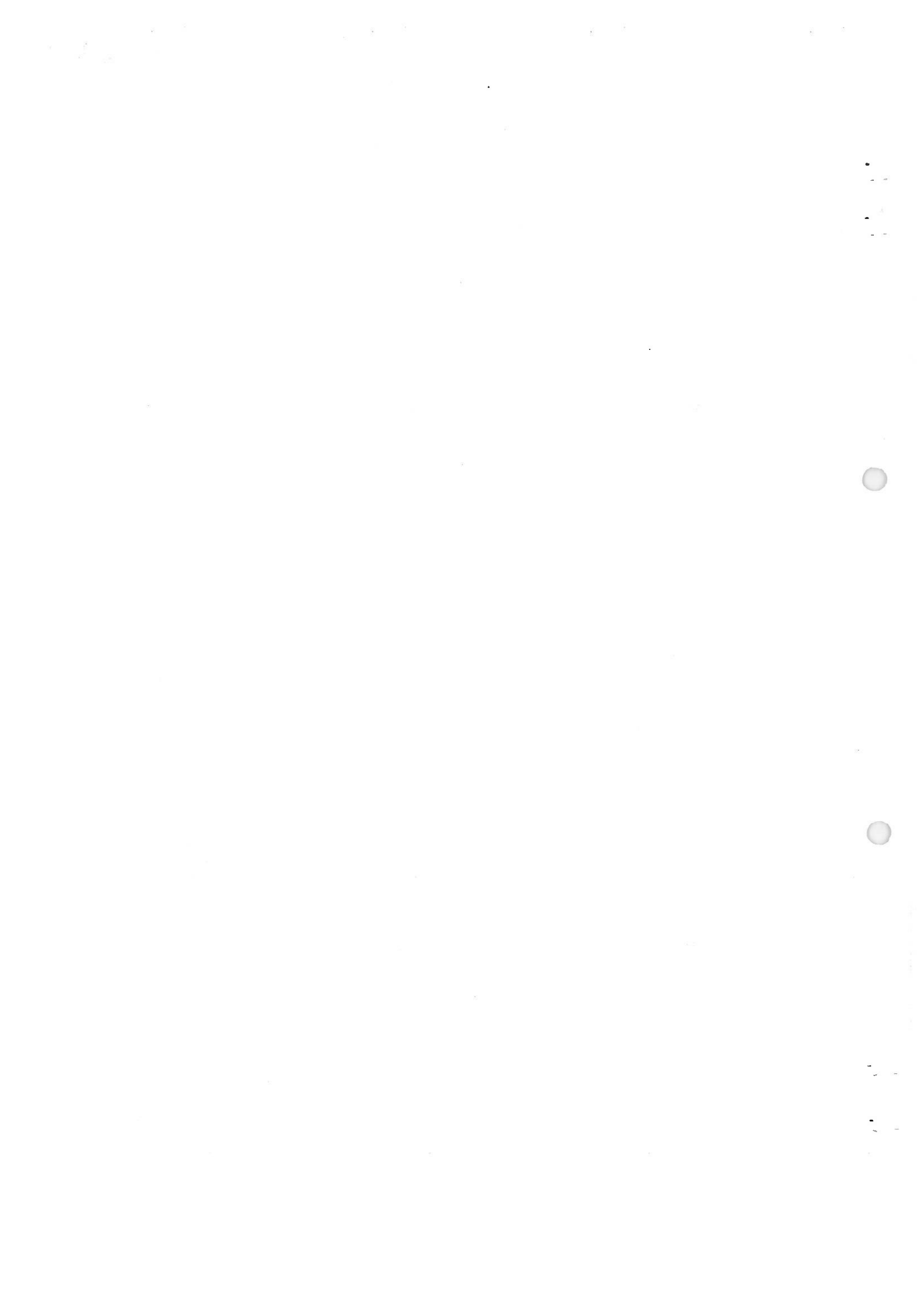
- <http://fundacion-entorno.org/programas/Investigacion/ippc.htm>

### EPER

- <http://europa.eu.int/comm/environment/ippc/eper.htm>

MINISTRY OF ENVIRONMENT

TURKEY





## STATUS OF CP IN TURKEY

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Dr. Nilgun Ciliz  
TUBITAK-MRC

### Recently for certain industries

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- source inventories and
- cause assessment for
- cp option generation

### Current activities will depend on

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- Ministry of Environment
- activities that will be carried out in Turkey related to the environmental report of Turkey's accession to the EU

### The tasks of Turkey for the harmonisation with the EU environment acquis are:

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- transposition of legislation
- implementation and enforcement
- setting up the necessary resources and institutions

### Legislations on

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- waste management
- water quality
- air quality
- industrial pollution control and risk management
- nature protection

### STRATEGIES FOR ENVIRONMENT

#### Certain pieces of the legislation

- .....fuel quality
- .....wastewater treatment
- .....drinking water supply
- .....large combustion plants
- .....waste management-landfill, incineration
- .....IPPC
- All new investments

**Other activities....**

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Turkish Industrialists' Businessman Association  
Istanbul Chamber of Industry

EUREKA project

ISO 14001 courses

"Eco-Management Week" with the support of CEMESA  
and SBA

GEF

cooperation projects with MoE

Centre for Renewable Energy Sources  
(CRES) Athens, Greece.

new project proposals

**Report on**  
**THE STATUS OF CP IN TURKEY**  
**by Dr. Nilgün C I z**

The source inventories and cause assessment have already lead to various types of option generations in certain industrial sectors. Especially the high cost of process water mainly in textile sector is the reason for the seeking of water saving technologies. On the other hand, energy conservation implementations have increased a lot especially in the cement industry. However, in all of the industrial sectors raw material substitution has not been taken into consideration as the product marketing is of great importance and issues related to raw material changes will directly affect the product quality.

Within this frame various types of projects have been carried out in certain enterprises. Due to the present situation in the Ministry of Environment (MoE) no further actions can be followed.

There has been the necessity of organizational changes in the Ministry of Environment. Decisions related to this have been taken into consideration during the annual meeting that MoE has handled with the contribution of various types of delegates in Turkey. The experiences of the participants show that most of the organizations are necessary mainly on; 1) the successful cooperation of MoE with other associations will be realized in each city. 2) the administrative capacity of MoE for implementation, enforcement and monitoring of environmental legislation is of utmost importance. 3) cooperation of the MoE with other governmental bodies, research institutes, associations, industrial sectors is very important.

The aforementioned issues are considered with much more importance with the integration of Turkey's recognition of EU candidate country.

Within the adaptation programme of EU, industrial sectors have started to focus on international market requirements and these requirements are closely related to product/process/service qualities which are the key words of CP.

The ongoing activities are summarized as follows:

**1) Environment in the Context of Turkey's Accession to the EU.**

As Turkey has officially been recognized as EU candidate country various types of strategies for the environmental issues have been determined. From the point of sector specific challenges; air quality issues, waste management issues, water quality issues, nature protection and IPPC directives are of utmost importance.

Turkey has already presented the National Plan for the adoption of acquis. It generally indicates the accession strategy Turkey intends to adopt for all sectors, and for environment particular. The tasks of Turkey for the harmonization with the EU environment acquis are: Transposition of legislation, implementation and enforcement, and setting up the necessary resources and institutions. In this process, the EU indicates its estimation of the short term and medium term priorities in the Accession Partnership. Besides the adaptation of a transposition

programme of the acquis, the short term priorities for 2001 include transposition of the Environmental Impact Assessment directive.

As an overall assessment Turkish legislation is still very different from that of the Community in particular in terms of standards, monitoring requirements and methods of measurement. For the time being the implementation of the laws leaves much to be desired. On the other hand, detailed compliance checks of these laws in order to ensure full transposition of EC environmental directives. The acquis is extensive, 270 directives are covered. The EU environmental regulations which are 174 have been investigated by Ministry of Environment. It has been concluded that 23 of them have already been in parallel with ours. Whereas 65 of them were partially compatible with our regulations. On the other hand the other 86 regulations do not exist in Turkish regulations. Certain pieces of legislation stand out to be invested. These are the particularly the ones concerning wastewater treatment, drinking water supply, fuel quality, large combustion plants, waste management; landfill, incineration and IPPC.

The sustainable development principles will be integrated into the definition and implementation of all other sectoral policies in medium term priorities. Implementation and enforcement of Environmental Impact Assessment directive is also in mid term priorities.

During the annual meeting of Ministry of Environment in November 2000, the related meeting notes are published. The decisions are valid for all of the project proposals, activities for 2001 and the coming years. Concerning the Environmental technologies, renewable energy sources are pointed out. On the sectoral basis; special emphasis is given to industrial organizational parks. Also for the textile industry azo dye stuff consumption will be prevented. This is very important for the raw material substitution in CP implementations. The waste minimization techniques in a group of SME's will be more economical than having in single plants. Environmental training, awareness issues will be handled carefully. It has been strongly indicated that environmental factors will be considered during capital investment in the developing areas of Turkey for pollution prevention.

Apart from Turkey's accession to the EU, Turkey has already signed the European Environment Agency on October 9<sup>th</sup>, 2000.

## **2) Other Activities**

On the other hand as TUBITAK-MRC has been active in the commission of environmental protection at Turkish Industrialists' Businessmen Association (TUSIAD) CP approach has been integrated in the activities of them.

Starting form 2001, Istanbul Chamber of Industry and TUBITAK-MRC have initiated cooperation activities on the sectoral basis of SME's.

As it has been mentioned in the previous statements of Turkey, the first CP project which was supported by World Bank was finalized by 1999.

Within the framework of CP methodology, a EUREKA project has been carried out successfully in the woollen textile sub sector till 2002. The project has started with the cooperation of CITEVE (the national textile technological research centre of Portugal) and its

two industrial enterprises and with the contribution of Altinyildiz Textile company in Istanbul. Special emphasize is given to water conservation issues. The process water discharges have been investigated for all types of operations and are evaluated from the point of pollutant loads. The assessment of the reusable and remaining streams of the wastewater at each step of the processes lead to various types of scenarios on the basis of CP options.

During the Feasibility Phase of the CP methodology; the economical, environmental and technological issues will be considered for screening the CP options.

As special emphasize is given to renewable energy sources; a cooperation has been started between TUBITAK-MRC and Centre for Renewable Energy Sources (CRES) from Athens, Greece.

Concerning Environmental Management Systems on the general basis; ISO 14001 courses have been carried out in certain periods for all types of industries.

The "Eco-Management Week" will be carried out at TUBITAK-MRC with the support of CEMESA and Sustainable Business Association (SBA) between 7-11.May.2001. Chamber of Environmental Engineers as being the National Focal Point of SBA will take part. This seminar will show the concrete measures presented in the "Good Housekeeping" Guide and in the "Minimization Opportunities Environmental Diagnosis" Guide that companies can use to bring down the costs of production, enhance business productivity, and reduce negative environmental impact. Eco-Management considers "Good-Housekeeping" as the first step towards eco-efficiency and "Environmental Diagnosis" as a more systematic tool for environmental management.

