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Original: ENGLISH

## Introduction

1. Article 6 of the Protocol for the Prevention of Pollution from Land-based Sources and Activities (LBS Protocol), which was signed in 1980 and revised in 1996, calls for the strengthening and/or establishment of systems of inspection related to land-based pollution. Phase III of MED POL, adopted in 1997, includes a pollution control component to assist countries to fulfil the provisions of the LBS Protocol.

2. A Workshop of Experts on Compliance and Enforcement of Legislation in the Mediterranean for Control of Pollution resulting from Land-based Sources and Activities was convened in Athens in 1999 to assess the situation in the Mediterranean and propose future action. The recommendations of the Workshop included the establishment of an informal regional network aimed at establishing contacts at the regional and international levels, facilitating discussion and the exchange of information, the organization of capacity-building measures and the development of inspection systems. The Meeting of the Informal Network on Compliance and Enforcement was therefore convened in Sorrento from 15 to 17 March 2001 to review progress in the field of compliance and enforcement and discuss future activities.

## Participation

3. The Meeting was attended by experts from the following Contracting Parties to the Barcelona Convention: Albania, Algeria, Bosnia and Herzegovina, Croatia, Cyprus, Egypt, Greece, Israel, Italy, Lebanon, Libyan Arab Jamahiriya, Malta, Monaco, Slovenia, Spain, Syrian Arab Republic and Tunisia. The Meeting was also attended by one invited international expert as well as by representatives of the Blue Plan Regional Activity Centre (BP/RAC), the Cleaner Production Regional Activity Centre (CP/RAC), MAREVIVO and Greenpeace. The full list of participants is attached as Annex I.

## Agenda item 1: Opening of the Meeting

4. The Meeting was opened by Mr Antonio Tosi, Director General, Regional Agency for Environmental Protection in Campania (ARPAC), who welcomed the participants to Sorrento and emphasized the importance of compliance with environmental standards throughout the Mediterranean and enforcement. He hoped that the arrangements made by ARPAC for the Meeting in Sorrento would provide a conducive background for the important work to be carried out by the participants.

5. After welcoming the participants, Ms M. Luisa Imperatrice, Technical Director, ARPAC, reviewed the functions and responsibilities of ARPAC within the system of regional agencies for environmental protection established, in accordance with Law No. 61/1994, under the overall responsibility of the National Agency for Environmental Protection (ANPA). The regional agencies carried out environmental control and monitoring, organized the systematic collection of environmental data, undertook technical analyses and provided support to local authorities in the region. ARPAC had already held meetings to exchange knowledge with other regional agencies, such as those in Emilia Romagna, Tuscany and Sicily, and looked forward to a valuable exchange of experience with colleagues from around the Mediterranean during the Meeting with a view to developing further the Italian system of environmental monitoring.

6. Mr Giancarlo Boeri, Director, Department for Technological and Natural Risks, Italian National Environmental Protection Agency (ANPA), thanked ARPAC for the excellent organization of the Meeting. He noted that the Meeting formed part of the national policy for Italy's environmental agencies to be present on the international scene. He added that the Meeting would provide an opportunity to reinforce the reflection already undertaken at the regional and national levels in Italy on the development of environmental enforcement and compliance systems.

7. Mr Francesco Saverio Civili, MEDPOL Programme Coordinator, expressed gratitude to ANPA and ARPAC for hosting the meeting and recalled the important intellectual, financial and logistical support provided by Italy to the work of MAP with a view to the sharing of experience and capacities with experts throughout the Mediterranean, with the long-term objective of building a solid system of environmental compliance and enforcement throughout the region.

#### **Agenda item 2. Adoption of the agenda**

8. The Meeting adopted the provisional agenda contained in Annex II.

#### **Agenda item 3. Scope and purpose of the Meeting**

9. Mr Civili recalled that the Meeting was being convened within the framework of the MED POL Programme, and in particular as part of its compliance and enforcement activities. The objectives of the Meeting, which was a follow up to the Workshop held in 1999 in Athens on the same subject, were to review the present situation of inspection systems in Mediterranean countries, to identify common problems and to formulate a regional plan to strengthen the existing inspection structures.

#### **Agenda item 4. Election of officers and organization of work**

10. The Meeting elected the following officers:

Chairperson: Mr Giancarlo Boeri (Italy);

Vice-Chairperson: Ms Tatjana Hema (Albania);

Rapporteur: Mr Yasser Sherif (Egypt).

11. With regard to the organization of work, Mr George Kamizoulis, WHO/MED POL, recalled that the Meeting would include brief presentations and discussion of country reports on compliance and enforcement, with emphasis being placed on the issue of inspection systems. The Meeting would then proceed to a discussion of the measures to be taken to meet the needs identified in the field of compliance and enforcement, with a view to the formulation of a regional plan for strengthening the inspectorate systems and the proposal of activities for the coming years. In particular, it would also have the task of discussing and proposing the content of guidelines on environmental inspection systems. The proposals made by the Meeting would provide the Secretariat with guidance for the formulation of guidelines which, once they had been further reviewed, could be submitted to the Contracting Parties for approval.



## **Agenda item 5. Presentation of international networks on compliance and enforcement**

12. Mr Rob Glaser, TOPS Environmental Consultants, outlined various approaches and systems for environmental compliance and inspection, underlining the importance of clearly defining both lines of responsibility and the objectives of any inspection system. Application of inspection criteria should be strict, but nevertheless allow for a certain measure of flexibility.

He described various stages in the development of inspectorates, which finally led to either ministries of the environment and inspectorates or ministries of the environment and agencies. Scientific councils still advised the ministry, but had no legal competence.

There were two basic principles applicable to inspectorates of any type: compliance with the law was mandatory; and the law must be applied in a fair and consistent way. He gave an explanation of the regulatory cycle, showing that each element of the inspection cycle was important. If one link was weak the system would not function properly.

Draft criteria for inspections had been drawn up by the European Network for the Implementation and Enforcement of Environmental Law (IMPEL) and were available on the Internet.

Four critical issues of which inspectorates must be aware were the need to be independent, the extent to which condoning was accepted, the quality of output, and efficient management. In order to be cost-effective, inspectorates should make the attempt to out-source activities to specialized agencies or institutes.

He then drew attention to a number of emerging trends; self-monitoring by industry, tailor-made permits by authorities; inspection guidelines and checklists used by inspectorates; the change from compliance checking to non-compliance checking.

Turning to networking, he described the genesis of the International Network for Environmental Compliance and Enforcement (INECE), which had started as a collaborative effort between the United States Environmental Protection Agency and the Netherlands Ministry of the Environment. The INECE had developed into an informal partnership linking UNEP, the EC, and the World Bank, together with representatives from a large number of countries and NGOs. Its goals were to promote awareness, in-country enforcement and cooperation through regional and global networks. In order to achieve those goals, the INECE had issued several publications, launched an Internet site, and created regional and sub-regional networks and partnerships.

With regard to the IMPEL, he explained that it had been set up for the purpose of exchanging experiences on partnership. It was active in a number of projects and he mentioned in particular the AC-IMPEL, which helped accession countries to access and put into effect EU Directives.

13. Mr Alessandro Curatolo, Principal Administrator, European Community, explained the European Union's enforcement strategy, which encompassed the legislative phase, the implementation phase, and the review and evaluation phase. He recognized that the implementation phase gave rise to the most problems, adding that the European Commission had a duty to investigate complaints of non-implementation, if necessary bringing the requisite legal proceedings before the European Court of Justice. The Barcelona

Convention could not, of course, have such a procedure, but it did contain a political commitment to implement its provisions.

As far as inspectorates were concerned, the EC had recently prepared a recommendation which contained principles that were also applicable within the framework of the Barcelona Convention. EU countries were called on to introduce criteria for monitoring compliance and inspections and those might serve as a model for the Contracting Parties. Moreover, two years after the adoption of the recommendation, Member States had to report on what they had done to implement it.

The future creation of the Euro-Med Free Trade Area made it imperative that countries around the Mediterranean have comparable inspection systems.

#### **Agenda item 6. Briefing on developments on compliance and enforcement in the framework of MED POL**

14. Mr Civili, MED POL Programme Coordinator, recalled the important changes that had taken place in MAP and MED POL following the revision of the Barcelona system to take into account the principles and recommendations adopted in Rio in 1992. Whereas MAP's activities had previously focused on the monitoring and assessment of marine pollution in the Mediterranean Sea, the focus of MAP and MED POL was now on the development of a structured system to help countries develop the strategies and policies required to achieve sustainable development. The objectives and strategies of MAP and MED POL had therefore steadily shifted towards the reduction and elimination of pollution.

In this respect, the revision of the LBS Protocol had been very significant because it had extended the scope of the Protocol to cover the hydrographic basin of the region rather than just the sea. The provisions of the Protocol had also been extended to cover inspection and sanctions, reflecting endorsement by the Contracting Parties of the beginning of a new and important phase of pollution control. The revised Protocol provided for the adoption of a Strategic Action Plan (SAP) at the regional level, on the basis of which National Action Plans would be formulated for the reduction and elimination of pollution from land-based sources. The regional SAP had been adopted by the Contracting Parties in 1997 and, with financing from GEF, assistance was now being provided to countries, inter alia, for the development of National Action Plans to eliminate land-based pollution. This assistance included a strong capacity-building component, which would also cover compliance and enforcement through the development and/or strengthening of inspection and permitting systems. The objective was that within a few years all Mediterranean countries would have established effective inspection structures. This action was further reinforced by an important new element, namely a reporting system on the implementation of the Barcelona Convention and its Protocols, for which the first integrated report was currently under preparation.

He added that, at a meeting to be held in Catania at the end of March 2001, countries would examine proposals for the development of a set of methods and principles for the implementation of the SAP. In conclusion, he emphasized that Mediterranean countries were finally entering the phase of the practical implementation of a system for the reduction and elimination of pollution from land-based sources. The process would undoubtedly be difficult, but he hoped that the action taken would be successful and would ensure the implementation of the regional legal system for the control and elimination of land-based pollution.

#### **Agenda item 7. Presentation of country reports on environmental inspectorates**

15. Experts from the following countries presented reports on environmental inspectorates in their countries (see Annex III to this report): Albania, Algeria, Bosnia and

Herzegovina, Croatia, Cyprus, Egypt, Greece, Israel, Italy, Lebanon, Libyan Arab Jamahiriya, Malta, Monaco, Slovenia, Spain, Syrian Arab Republic and Tunisia. The report for Morocco was not presented but is also included. During their presentations, several experts requested Secretariat assistance to develop further their countries' inspectorate systems.

16. At the invitation of the Chairperson, the observer for Greenpeace took the floor. She stressed the importance of ratifying international environmental agreements, which was an essential precondition for the success of all efforts made at the national level. She pointed out that international commitments had already been made to eliminate certain pollutants, not simply to reduce them. In her view each country should undertake a general review of its industrial structure, in collaboration with NGOs and civil society, in order to ensure that its international commitments would be respected within the time limits allowed.

17. She described Greenpeace's experience in France, which had shown that industry could not use industrial secrecy as a pretext for withholding information on discharges. The public had a right to know. Even in the absence of any other action, the simple fact of knowing that the public took an interest in discharges should incite certain industrialists to observe the regulations.

18. Mr Civili, MED POL Coordinator, also underlined the importance of ratifying the revised Barcelona Convention and Protocols so that they could enter into effect as soon as possible. Public participation was an essential element of any environmental programme and he added that GEF funds would be made available for a framework plan for the participation of NGOs in the implementation of the Strategic Action Plan to address pollution from land-based activities, initially at the regional level although it could subsequently serve as a model for the preparation of National Action Plans.

#### **Agenda item 8. Presentation of identified gaps and possible assistance to form a programme of related activities**

19. Mr Kamizoulis, WHO/MED POL, introduced a working paper containing a synthesis of the gaps identified in the inspectorate system in the course of the presentation of country reports, together with possible solutions (see Annex IV to this report).

20. He recalled that the countries participating in the Meeting had described the weaknesses identified in their respective national frameworks. These specific issues related to the regulatory cycle for environmental control were also connected with inspectorate functions. Some countries had identified gaps in legislation, for example: inadequate legislation at local and even national levels; the absence of laws and legislation on EIA procedures and the absence of regulations on the necessary or required information to be provided for environmental application. The diversity of needs was due to the specific country structure, as well as to the degree of environmental progress achieved in the countries as a result of different factors. A number of countries had identified inefficiencies in the permitting system due to lack of emission standards, lack of data on issued permits, the need to develop and establish an integrated permit system, and other problems mentioned in the relevant sections of their reports.

21. Regarding the basic inspectorate functions, including compliance control and compliance promotion and enforcement, several statements had been made, mostly related to the inspectorate system and its management. These included the irregularity of inspections, the lack of adequate reporting by inspectors, the poor operational level of inspectors, the lack of adequate equipment for control measuring, the weak legal status of environmental inspectorates (with reference to the tasks and responsibilities of the

inspectors), not to mention the lack of simple operational means, such as cars, office facilities, etc. When defining the needs for strengthening the inspectorate systems, most countries had also presented possible solutions, while others had made proposals indicating the need for assistance from the Mediterranean Action Plan.

22. During discussion of the working paper, the speakers agreed that guidance was required on environmental inspection and enforcement at the Mediterranean level and that guidelines should be developed.

23. A number of speakers suggested that the principles expressed in the draft Recommendation of the European Parliament and of the Council providing for minimum criteria for environmental inspections in the Member States could be a useful input when preparing guidance on this subject at the Mediterranean level. The draft Recommendation had served a useful purpose within the European Union in assisting countries which lacked criteria for environmental inspection to achieve progress, thereby demonstrating how an informal network of inspectorates could encourage progress at a practical level on the basis of a non-binding set of minimum criteria.

24. It was agreed that, in addition to the above Recommendation, any other relevant guidelines already in force would be taken into consideration in preparing the Guidelines for environmental inspection for the Mediterranean region.

25. Any guidance produced at the Mediterranean level would clearly be designed to help countries with weaker inspection systems to raise their standards of inspection, and there would be no question of lowering standards in countries where environmental inspection systems were already strong.

26. With regard to the section of the working paper on technical assistance for strengthening inspection and enforcement bodies, one representative pointed out that training was much more effective when carried out in national languages. In particular, in view of the number of Arab countries in the region, training materials should also be produced in Arabic. In response, Mr Kamizoulis agreed that, where funding was available, training courses and materials should be in Arabic, as well as in other national languages. Training courses would be organized for countries at their request and covering the needs that they identified.

27. During the discussion on the section of the working paper concerning action to promote the exchange of experience and information, it was proposed that the MAP Website could include a page on inspection and inspectorates. With support from national collaborators, the Web page could include examples of good practice at the national level to provide guidance and inspiration to other countries. An additional suggestion was that specific themes could be selected for discussion among experts using the Internet.

28. Several speakers raised the issue of exchanging experience on approaches to compliance promotion. In particular, regarding voluntary compliance as a component of compliance promotion, efforts should be made to educate industrial and other operators with regard to the cleaner production technologies available. The Meeting was provided with information on the Cleaner Production Regional Activity Centre (CP/RAC) and its activities over recent years, inter alia "Med Clean" cleaner production case studies and its Web site. The Meeting agreed that it would be useful to link the MAP Web page on inspection to the CP/RAC Web site.

29. With regard to the organization of technical visits and the exchange of experience, it was explained that technical visits normally involved an explanation by the host country of

the manner in which its inspection system worked, discussions of various technical items, such as the frequency of inspection visits and the manner in which self-monitoring could be checked, and finally a site visit. Experience of such visits in the European Union, for example with accession countries, including Cyprus and Malta, had given very positive results. Longer bilateral and trilateral exchanges of individual inspectors, who would normally spend a few weeks working in the inspectorate in the host country, could also be very valuable, provided that sufficient attention was paid to the problem of the wider dissemination of the experience acquired by the inspectors concerned.

30. Several speakers referred to the difficulties experienced in organizing site visits at the enterprise level. These difficulties might include issues of confidentiality, particularly where the visiting inspector was from a country where competition was intense in the industry concerned. However, experience in several countries showed that enterprises learned to become more open to such visits.

#### **Agenda item 9. Discussion on the preparation of draft guidelines on compliance and enforcement**

31. Mr Kamizoulis, WHO/MED POL, recalled that the Workshop of Experts on Compliance and Enforcement of Legislation in the Mediterranean for Control of Pollution resulting from Land-based sources, held in Athens in 1999, had proposed that guidelines on compliance and enforcement be developed. The present Meeting was therefore called upon to propose possible contents of the guidelines as a basis for the preparation of a first draft by the Secretariat, which would then go through an expert review process with a view to submission to the MED POL coordinators, the MAP focal points and eventually the Contracting Parties. The proposals should therefore indicate the general lines to be followed by the guidelines, rather than going into detailed recommendations.

32. He added that the possible contents might well include: the purpose of the guidelines; their coverage (would they only include municipal and industrial installations, or other facilities as well?); definitions; functions (would compliance promotion be included?); the types of environmental inspection to be covered; the responsible bodies (on the understanding that ample latitude would be given to cover the various administrative systems); the organization and performance of environmental inspections; inspection strategies; the planning of environmental inspections (including the issue of whether they would be carried out regularly, with notice and/or unannounced); when and how site visits would be conducted; arrangements concerning reporting requirements; enforcement management systems; and the action taken in the event of non-compliance (the stage at which fines would be imposed, and the issue of whether to make use of preliminary "soft" communications, followed by "harder" communications). He noted that the above suggestions were largely drawn from existing guidelines on environmental inspection.

33. During the discussion of the scope and purpose of the proposed guidelines, the Meeting agreed that the guidelines must concern inspection systems within the context of the LBS Protocol. It was further agreed that their purpose was to help countries establish inspection systems or review existing systems. The guidelines would therefore provide guidance, but would not constitute a code of practice. They should outline the basic components of inspection systems and the obligations set out in the Barcelona Convention and the LBS Protocol and provide a series of practical options for their implementation. They should, for example, explain the obligations with regard to permitting contained in the above instruments, while indicating different systems that could be adopted for their implementation. The guidelines should be useful for inspection systems at all levels of development and contain a range of ideas for guidance. They should be drawn up in full recognition of the fact

that inspection systems throughout the region would evidently differ, but that they should be comparable.

34. With regard to the recommendation that the Secretariat produce materials for inspection systems to help officials carry out their duties, it was noted that the Secretariat could play a useful role in compiling, analysing and disseminating information on the practices followed by inspectors at the national level for use by national inspectorates in the development of their working practices. It could also prepare technical documents on inspection in specific industries. However, it was the responsibility of each country to prepare guidelines for its own inspectors based on national legislation and practice.

35. A number of further proposals were made during the discussion on the proposed contents of the guidelines. These included the issue of self-monitoring and how it could be handled, particularly in view of the shortage of human resources available to inspection services and the consequent need to make use of resources outside the inspectorates. A section could be included on human resources, which constituted a difficult but valuable subject. Guidance could also be provided on the management of inspection services.

36. Experts from Algeria, Egypt and Italy volunteered to act as a consultation group through the exchange of e-mails to assist in the drafting of the guidelines.

37. In response to comments concerning the level of detail to be entered into by the guidelines, Mr Kamizoulis, WHO/MED POL, suggested that both a brief text and more detailed proposals could be developed so that representatives of the countries could decide upon the level of detail appropriate in their particular case.

#### **Agenda item 10. Conclusions and recommendations**

38. The following conclusions were reached by the Meeting:

- The activities of the Informal Network should be strengthened by providing the bases for more collaboration among its members as a contribution to the implementation of the LBS Protocol and the SAP.
- Collaboration with other regional networks and relevant international frameworks with similar exchange programmes in other regions should continue and be intensified.
- More support should be given to the implementation of the activities of the Informal Network on Compliance and Enforcement within the framework of the MED POL.

##### **A. General issues**

- To encourage the Contracting Parties to report on the improvements and the achievements, as well as the difficulties encountered in relation to the development of inspection systems in their countries.
- To invite the Secretariat to produce relevant material for the inspection systems such as technical manuals and to compile materials on inspection systems in other countries which would help the officials in the proper carrying out of their duties.

## B. Specific issues

- To provide technical assistance for the strengthening of the inspection and enforcement bodies as requested by countries in relation to specific identified needs, including assistance to governments for:
  - (a) development of strategies, objectives and planning of inspection and enforcement activities;
  - (b) improvement of the methodology of management and the organizational structure for permitting, inspection and enforcement through exchange of experts and training;
  - (c) identification of the required inspection resources, i.e. number and expertise of the staff, offices, equipment and vehicles; and
  - (d) training of key staff from different countries so that they can transfer their experience in their own countries by acting as trainers in critical topics, which may include:
    - promotion of voluntary compliance;
    - self-monitoring regulations;
    - enhancement of the enforceability of permits;
    - organization and scheduling of inspection;
    - follow-up of inspections;
    - enforcement options;
    - feedback from inspections to permitting; and
    - available technologies for selected sectors, including cleaner technologies.
- To consult countries members of the Informal Network in order to select topics for the training courses.
- To prepare training material for the training courses, where it is not already available in other networks, including the preparation of the necessary media (i.e. booklets, transparencies, etc.) in one or more languages as feasible.
- To circulate the results and outputs of the courses among all members.
- To establish a Mediterranean inspectorate web page within the UNEP/MAP website in order to:
  - (a) promote communication among agencies responsible for these tasks within their countries, as well as among the Mediterranean countries;
  - (b) inform the public, industries, local authorities, institutes, etc; and
  - (c) exchange information on inspection techniques, practical experience and methodologies through:
    - publication of papers on the website related to the latest and most popular environmental inspection practices;

- posting of each country's practices with summaries prepared by specialists in the country concerned;
  - preparation of a FAQ (Frequently Asked Questions) section providing answers to questions and problems posed by the specialists, with answers to be given by specialists in other countries who have already faced and resolved the problem in question; and
  - establishing a link with the CP/RAC web page covering cleaner production success stories.
- To organize technical visits in order to give inspectors the opportunity of being hosted by one of the Network countries for the purpose of exchanging experiences. The exchange programme could consist of:
    - (a) an introduction to the legal system and inspection;
    - (b) a thematic subject to be dealt with by all participants; and
    - (c) a site visit to an enterprise with discussions on inspection of the facility.
  - To organize bilateral and trilateral exchanges of individual inspectors and to ensure that experience is widely distributed as a learning exercise for others.
  - To prepare guidelines within the context of the LBS Protocol to serve as guidance for inspection systems. These guidelines should include:
    - preface on permitting system;
    - purpose;
    - coverage ;
    - definitions: • functions; • types of environmental inspections;
      - responsible bodies;
    - organization and carrying out of environmental inspections;
    - inspection strategy;
    - plans for environmental inspections;
    - conducting site visits;
    - reports;
    - enforcement management system;
    - occurrences of non-compliance;
    - self-monitoring; and
    - human resource management.

#### **Agenda item 11. Adoption of the report**

39. After making a number of comments and suggestions, the Meeting adopted this report.

#### **Agenda item 12. Closure of the Meeting**

40. Following the customary exchange of courtesies, the Vice-Chairperson declared the Meeting closed at 12.15 pm on Saturday, 17 March 2001.



**ANNEX I**

**LIST OF PARTICIPANTS  
LISTE DES PARTICIPANTS**

**ALBANIA  
ALBANIE**

**Ms Tatjana Hema**  
President  
National Environmental Agency  
Rr "Zhan D'Ark" Nr.2  
Tirana  
Albania

Tel:+355-4-230682  
Fax:+355-4-365229  
E-mail: albnea@albnet.net

**ALGERIA  
AGERIE**

**Mr Akli Guelmaoui**  
Sous Directeur de la surveillance de  
l'environnement  
Direction Générale de l'Environnement  
Ministère de l'Amenagement du Territoire et de  
l'Environnement  
Avenue de l'Independence  
Alger  
Algérie

Tel:+213-21-676394  
Fax:+213-21-670494  
E-mail: aguelmaoui@environnement-dz.org

**BOSNIA and HERZEGOVINA  
BOSNIE et HERSEGOVINE**

**Ms Selma Cengic**  
Researcher  
Hydro - Engineering Institute Sarajevo  
Str. Stjepana Tomica 1  
P.O. Box 405  
71 000 Sarajevo  
Bosnia and Herzegovina

Tel:+387-33-207949  
Fax:+387-33-207949  
E-mail: scengic@utic.net.ba

**CROATIA**  
**CROATIE**

**Ms Mojca Luksic**

Adviser  
State Water Directorate  
Ul. Grada Vukovara 220  
10000 Zagreb  
Croatia

Tel:+385-1-6151820/6307333

Fax:+385-1-6151821

E-mail: du.vode@zg.hinet.hr

**CYPRUS**  
**CHYPRE**

**Mr Loizos Loizides**

Fisheries Officer A'  
Department of Fisheries and Marine Research  
Ministry of Agriculture, Natural Resources and  
Environment  
13 Aeolou Street  
1416 Nicosia  
Cyprus

Tel:+357 2 807807

Fax:+357 2 775955

Mobile:+357 9 427828

E-mail: lloizides@cytanet.com.cy

**EGYPT**  
**EGYPTE**

**Mr Yasser Sherif**

General Manager  
Environics  
6 Dokki Street  
Giza 12311  
Egypt

Tel:+20-2-3360599/7495686/96

Fax:+20-2-7492472

E-mail: environics@link.com.eg

**EUROPEAN COMMISSION**  
**COMMISSION EUROPEENNE**

**Mr Alessandro Curatolo**

Administrateur Principal  
Direction Générale de l'Environnement  
Commission Européenne DG ENV/A4  
200 rue de la Loi  
B-1049 Bruxelles  
Belgique

Tel:+32-2-2990340

Fax:+32-2-2969557

E-mail: alessandro.curatolo@cec.eu.int

**GREECE**

**GRECE**

**Ms Angelica Psaila**

Special Environmental Service (SES)  
Ministry of the Environment, Physical  
Planning and Public Works  
11 Alexandras Avenue  
11473 Athens  
Greece

Tel:+30-1-6412522

Fax:+30-1-6451914

E-mail: eyep-ypemode@ath.forthnet.gr

**ISRAEL**

**ISRAEL**

**Mr Ran Amir**

Head  
Marine and Coastal Environment Division  
Ministry of the Environment  
Khaiat 3  
P.O. Box 33583  
Haifa 31333  
Israel

Tel:+972-4-8622702

Fax:+972-4-8623524

E-mail: rani@environment.gov.il

E-mail: ramir@shani.net

**ITALY**

**ITALIE**

**Mr Giancarlo Boeri**

Director  
Dipartimento Rischio Tecnologico e Naturale  
Progetto Speciale Sistema Agenziale del Mezzogiorno  
Agenzia Nazionale per la Protezione  
dell'Ambiente (ANPA)  
Via Vitaliano Brancati, 48  
00144 Rome  
Italy

Tel:+39-06-50072863

Fax:+39-06-50072938

E-mail: boeri@anpa.it

**Mr Filippo Palomba**

Agenzia Nazionale per la Protezione  
dell'Ambiente (ANPA)  
Via Vitaliano Brancati, 48  
00144 Rome  
Italy

Tel:+39-06-50072999

Fax:+39-06-50072938

**Ms Alessandra Burali**

Agenzia Nazionale per la Protezione  
dell'Ambiente (ANPA)  
Via Vitaliano Brancati, 48  
00144 Rome  
Italy

Tel:+39-06-50072503

Fax:+39-06-50072938

E-mail: burali@anpa.it

**Mr Alessio Capriolo**

Functionaire  
Agenzia Nazionale per la Protezione  
dell'Ambiente (ANPA)  
Via Vitaliano Brancati, 48  
00144 Rome  
Italy

Tel:+39-06-50072504  
Fax:+39-06-50072938  
E-mail: capriolo@anpa.it

**Ms M. Luisa Imperatrice**

Technical Director  
ARPA Campania  
Napoli  
Italy

Tel: +39-081-7782111  
Fax: +39-081-7782536  
E-mail: arpac\_imperatrice@libero.it

**LEBANON**

**LIBAN**

**Dr Najj Kodeih**

Chief of Technology and Environment Service  
Ministry of the Environment  
P.O Box 70-1091  
Antelias  
Beirut  
Lebanon

Tel:+961-4-522222  
Fax:+961-4-525080/525052  
E-mail: nkodeih@moe.gov.lb

**LIBYA**

**LIBIE**

**Mr Elmonji S.I. Elsmeh**

Researcher in Pollution Combat  
EGA  
Tripoli  
Libya

Tel:+218-21-4839991  
Fax:+218-21-4839991  
E-mail:ega@egalibya.org

**MALTA**

**MALTE**

**Ms Prassede Grech**

Environment Officer  
Marine Pollution Section  
Environment Protection Department  
Pollution Control Coordinating Unit  
C/o Quality Control Laboratory  
Kordin Industrial Estate  
Paola  
Malta

Tel:+356-803937  
Fax:+356-660108  
E-mail: prassede@hotmail.com

**MONACO**  
**MONACO**

**Mr Cyril Gomez**  
Chef de section  
Direction de l'Environnement de  
L'urbanisme et de la Construction  
23 avenue du Prince Héréditaire Albert  
MC-98000 Monaco  
Monaco

Tel:+377-93-152299  
Fax:+377-93-509591  
E-mail: cgomez@gouv.mc

**SLOVENIA**  
**SLOVENIE**

**Mr Boris Zbona**  
Inspector of Environment  
Ministry of Environment and Spatial Planning  
Environmental Inspectorate of RS  
Regional Unit Nova Gorica  
Trg E. Kardelja 1  
5000 Nova Gorica  
Slovenia

Tel:+386-5-3028011 ext. 384  
Fax:+386-5-3029626  
E-mail: vanja.zbona@guest.arnes.si

**SPAIN**  
**ESPAGNE**

**Mr Adrian Vecino Varela**  
Subdirección General Cooperación  
Institucional y Políticas Sectoriales  
Ministerio de Medio Ambiente  
Plaza de San Juan de la Cruz s/n  
28071 Madrid  
Espagne

Tel:+34-91-5976732  
Fax:+34-91-5975980  
E-mail: adrian.vecino@sgnci.mma.es

**SYRIA**  
**SYRIE**

**Ms Reem Abed-Rabboh**  
Head  
Water Resources Management  
Ministry of Environment  
P.O. Box 3773  
Tolyani Street  
Damascus  
Syrian Arab Republic

Tel:+963-11-3330510/2234309  
Fax:+963-11-3335645  
E-mail: env-min@net.sy

**TUNISIA**  
**TUNISIE**

**Mr Samir Kaabi**

Directeur  
Département de Dépollution  
Agence Nationale de Protection de  
l'Environnement  
Rue de Caméroun – Belvédère  
BP 52  
1002 Tunis  
Tunisia

Tel:+216-1-840578  
Fax:+216-1-848069  
E-mail: anpe.boc@anpe.nat.tn

**OBSERVERS**

**Mr Antonio Tosi**

Director General  
ARPA Campania  
Napoli  
Italy

**Mr Marcello Ferrara**

Agenzia Nazionale per la Protezione  
dell'Ambiente (ANPA)  
Via Vitaliano Brancati, 48  
00144 Rome  
Italy

Tel:+39-06-50072295/0328-4172750  
Fax:+39-06-50072938

**Ms Annamaria Nuccetelli**

Agenzia Nazionale per la Protezione  
dell'Ambiente (ANPA)  
Via Vitaliano Brancati, 48  
00144 Rome  
Italy

Tel:+39-06-50072119  
Fax:+39-06-50072938  
E-mail: nuccetelli@anpa.it

**Ms Paola Rosa Rosa**

Responsabile Comunicazione  
ARPA Campania  
Napoli  
Italy

Tel: +39-0817-782518

**Mr Vincenzo D'Alessio**

Chimico Dirigente  
Dipartimento di Salerno  
ARPA Campania  
Via Lanzalone 54  
Salerno  
Italy

Tel: +39-089-695063  
Fax: +39-089-615059  
E-mail: e.dalessio@libero.it

**Mr Vincenzo Accarro**

Chimico  
Dip. Tec. Prov. Caserta  
ARPA Campania  
Piazza Matteotti  
Caserta  
Italy

E-mail: vicenzo.accarro1@tin.it

**Mr Acerra Vincenzo Aurelio**

ARPA Campania  
Napoli  
Italy

Tel: +39-081-7782440  
Fax: +39-081-7782536

**Mr Franco Scarponi**

ARPA Emilia-Romagna  
Via Po 5  
Bologna  
Italy

Tel: +39-051-6223895  
E-mail: fscarponi@sc.arpa.emr.it

**Mr Fabio Ciari**

ARPA Toscana  
Via Porrora 22  
Florence 50100  
Italy

Tel: +39-055-3206340  
Fax: +39-055-3206443  
E-mail: f.ciari@arpat.toscana.it

**Mr Lucio De Maio**

ARPA Toscana  
Loc. Montegemoli  
57025 Piombino (LI)  
Italy

Tel: +39-0565-277307/0335-7115385  
Fax: +39-0565-277308

**Mr R. Glaser**

TOPS Environmental Consultants  
7 Asserlaan  
4334 EP Middelburg  
The Netherlands

Tel: +31-118-625810  
Fax: +31-118-617591  
E-mail: tops@zeelandnet.nl

## SECRETARIAT

**Mr Francesco Saverio Civili**  
MED POL Coordinator  
Coordinating Unit for the Mediterranean  
Action Plan  
P.O. Box 18019  
48 Vassileos Konstantinou Avenue  
11610 Athens  
Greece

Tel: +30-1-7273106  
Fax: +30-1-7253196/7  
E-mail: fscivili@unepmap.gr

**Mr George Kamizoulis**  
Senior Scientist  
WHO/EURO Project Office  
Coordinating Unit for the Mediterranean Action Plan  
P.O. Box 18019  
48 Vassileos Konstantinou Avenue  
11610 Athens  
Greece

Tel: 30-1-7273105  
Fax: 30-1-7253196-7  
E-mail: whomed@hol.gr

## NON-GOVERNMENTAL ORGANIZATIONS

**Ms Katia Kanas**  
Greenpeace International  
Keizersgracht 176  
NL-1016 DW Amsterdam  
The Netherlands

Tel:+31-20-5236204  
Fax:+31-20-5236200  
E-mail: K.Kanas@diala.greenpeace.org

**Mr Giovanni Capasso**  
MAREVIVO Associazione Ambientalista  
Napoli  
Italy

Tel:+39-081-7374212

## REGIONAL ACTIVITY CENTRES OF THE MEDITERRANEAN ACTION PLAN

**Ms Silvia Laria**  
Chargée de mission  
Institutions et Environnement  
Plan Bleu, Centre d'Activités Régionales (PB/CAR)  
15 Avenue Beethoven  
Sophia Antipolis  
F-06560 Valbonne  
France

Tel:+33-4-92387130/33  
Fax:+33-4-92387131  
E-mail: slaria@planbleu.org



**Ms Beatriz Parrilla**  
International Area Assistant  
CP/RAC  
Cleaner Production Regional Activity Centre  
184 Paris Street, 3rd floor  
08036 Barcelona  
Spain

Tel:+34-93-4151112  
Fax:+34-93-2370286  
E-mail: [cleanpro@cema-sa.org](mailto:cleanpro@cema-sa.org)

**ANNEX II****AGENDA**

- Agenda item 1.** Opening of the Meeting
- Agenda item 2.** Adoption of the agenda
- Agenda item 3.** Scope and purpose of the Meeting
- Agenda item 4.** Election of officers and organization of work
- Agenda item 5.** Presentation of international networks on compliance and enforcement
- Agenda item 6.** Briefing on developments on compliance and enforcement in the framework of MED POL
- Agenda item 7.** Presentation of country reports on environmental inspectorates
- Agenda item 8.** Presentation of identified gaps and possible assistance to form a programme of related activities
- Agenda item 9.** Discussion on the preparation of draft guidelines on compliance and enforcement
- Agenda item 10.** Conclusions and recommendations
- Agenda item 11.** Adoption of the report
- Agenda item 12.** Closure of the Meeting

**ANNEX III**  
**COUNTRY REPORTS ON INSPECTORATE SYSTEMS**

**ALBANIA**

# **ENVIRONMENTAL INSPECTORATE SYSTEM IN ALBANIA**

## **COUNTRY REPORT**

Prepared by

Dr. Tatjana **HEMA**

**President of the National Environmental Agency of Albania**

**Chief Inspector for Environmental Protection in Albania**

The Albanian system of command and control for environmental protection operates mainly on the basis of the traditional command and control of permits system. However some efforts to introduce some other up to date tools as financial incentives for cleaner technologies, awareness building and promotion of voluntary action and self-regulation by the industry are introducing.

The environmental Albanian regulatory cycle is complete. Thus, its components are the legal framework, permitting system, compliance control, compliance promotion, enforcement assessment and feedback. However, the development degree of each component is quite different. There is an obvious need for a stronger system of legislation, permitting system and control, to get a good control of the environmental pollution and damages in Albania

### **Legal framework.**

The Laws Nr. 7664 dt on January 21,1993 "On Environmental protection" and Nr. 8364 Date 02.07.1998 "On some changes and amendments of the law "On Environmental protection" dated on 21.1.1993" provide the legal base for the establishment and operation of the inspectorate body for environmental protection.

According to these laws, the Inspectorate for Environmental Protection is organized at the National Environmental Agency. It consists of the chief inspector and other inspectors in its regional branches in particular districts.

Since the former CEP (Committee for Environmental protection) has been part of Ministry of Health and Environment, some regulations regarding to the tasks, competencies and rights of environmental inspectors are not yet updated or changed.

Thus, on the basis of the regulations Nr 4341, dt 4.12.1996 "On competencies of inspectors for environmental protection", issued by Minister of Health and Environment, the inspectors for environmental protection:

- Are only the experts of the National Environmental Agency and Regional Environmental Agencies, who are nominated as inspectors.
- Control the compliance of legal, regulatory acts in force in the field of environmental protection
- Operate, who are at the NEA, in whole country territory, whereas of REA-s in their district.
- Cooperate with other inspectorate state bodies as Sanitary, Forestry and State Police.
- Control regularly all the activities having an impact on the environment
- Should inform the local and central government when environmental concern is available.
- Takes notes, keep records, issue control-acts and propose different measures for improvement, clean up or remedial the environmental pollution or damages
- Impose administrative measures or fines in case of law or inspectorate conditions violation

Actually, the President of the NEA should define the duties, rights and authority of the Inspectorate for Environmental Protection.

To assure an integrated approach of control and inspection, the mentioned laws and regulations provide that the Inspectorate of Environmental Protection, when accomplishing its duties under this law shall coordinate its work with other inspectorates and law enforcement organs.

According to the law "On some changes of the law 'On Environmental protection', dated on 1998, the Chief Inspector for the environment protection and NEA's President is member of the Council of the National Territorial Adjustment, whereas " The inspectors of REA-s in each prefecture are members of the Council of the Territorial Adjustment of respective districts.

According to the regulation of the NEA President Nr. 5 dt. 9.1.97, one of the tasks of REA-s is to plan and carry out inspections at different activities at the premises of territory of such an activity and to realize and control the enforcement of legal, regulatory environmental framework.

## Environmental Permitting

The need for a system of environmental permitting for activities, which may have a negative impact on the environment, was mentioned for the first time in the frame law "On environmental protection". Improvement of the system were reflected in the amendment of this frame law in 1998, requiring that state administration bodies or local authorities issue to physical and natural persons the relevant license for exerting an activity affecting the environment, after the NEA has issued the environmental permit for activity.

Natural and legal persons who engage in economic and social activities that may have an impact on the environment are obliged to apply for a environmental license from the designated competent authorities which is the NEA and Council of Ministers of Albania.

The licenses are provided for the following economic and social activities:

- a. Construction and setting into work of various facilities of local and national interest.
- b. Local and national programs and plans for territory structuring and urban development as well as their amendments.
- c. Construction of roads, railways, seaports, hydro-technical plants, other industrial activities, land reclamation and projects governing the improvement of superficial watercourses.
- ç. Exploration, extraction or exploitation of natural soil and subsoil minerals and resources.
- d. Exploitation of mineral or biological resources in waters intended for fishing, taking into account species, seasons, means and admissible levels of fishing.
- dh. Exploitation of forests that are of common interest; creation of forested areas; hunting, taking into account species, seasons, means and admissible levels of hunting.
- e. Exploitation of flora, fauna, natural resources, coastal zones and sea bottoms.
- ë. Opening up of new areas for growing fruits in zones with protected water resources.
- f. Production, sale or use of toxic products, as well as those to be used for phyto-sanitarian, agricultural and sylvicultural purposes.

- g. The import and export of toxic substances, and the transportation of toxic substances through the territory of the Republic of Albania.
- gj. Determining the manner of transportation, the site of deposit, processing and disposal of toxic and hazardous wastes.
- h. The import and export of plants and animal species considered being flora or fauna.
- i. Other activities that may have an impact on the environment, and which shall be determined by NEA.

The following authorities provide environmental licenses:

- a. For activities in paragraphs g and gj, by the Council of Ministers.
- b. For other activities, by NEA.

The permitting procedure is as follows:

- Environmental licenses are issued at the request of the natural or legal person, based on the technical documentation and the analysis of the impact on the environment presented by him.
- The Regional Environmental Agencies prepare their opinion on the basis of the first review of documentation and inspection on site and forward the request to the NEA
- The technical directorates of the NEA prepare the draft permit and forward to the Permitting Commission for discussion and decision making. The President of the NEA is the chair of the Permitting Commission.
- The license is given within three months from the request and it is valid from the time when the activity starts until the conditions, according to which the license is granted, change.
- The competent relevant authorities may postpone the time of granting the license for up to 6 months when conditions are not satisfied.
- The authorities are obliged to respond within the above time schedule, otherwise the license is considered to be approved.
- Environmental licenses become invalid unless the activity begins within one year from the time the license is granted. If this schedule is not complied with, a new license can be required.



- The competent relevant authorities may reconsider or revoke a license if new and unknown ecological elements appear at the time the license is granted, or if new legislation on the environment is passed. If it is the case, the NEA in cooperation with other ministries or institutions, taking into account the nature of the activity shall define schedules within which all the above conditions for obtaining an environmental license must be satisfied.

According to the legal frame in force, the studies and analysis of the impact on the environment presented by natural or legal persons applying for an environmental license, and the approval of the procedure of granting licenses by the relevant competent authorities is defined by the President of the NEA.

Natural and legal persons who are granted environmental licenses shall have to pay a license fee as defined by the President of the NEA. The license fee is to be paid into the account of the authority, which grants the license. Natural and legal persons who invest in the environmental field shall be exempt from this fee. The NEA in collaboration with other relevant ministries and institutions defines the investment list.

Since 1993, the flux of application for environmental license is growing due not only to the economic growth but also to the state authority and especially to the NEA authority increase. To date, on average more than 350 license per year are prepared focusing on different sectors, industries and services. The NEA has approved a very detailed list of activities requiring environmental permit.

Despite the achievements the permitting system is not perfect and needs important improvement. The NEA prepare integrated license (including all compartments of the environment) but in a very simple way and format of 1 page. The condition to be met by the applicants is so general and not detailed. The lack of new standards for emission and immission hamper such a process as well. The capacity to write high quality and realistic permits is quite small. The manpower for permit writing is insufficient.

### **Compliance control**

Regulation of the environment is duty of the NEA and its regional agencies, other ministries and central institutions, and local authorities. Regulation is considered to be continuous, taking into account observed parameters, sources and causes of environmental pollution and damage. Regulatory control over the sources and causes of environmental pollution and damage is generally exercised:

- a. By means of a legal act adopted by the competent bodies (NEA and its regional agencies, other ministries and central institutions, and local authorities)

- b. At the request of natural and legal persons and citizens that are affected or may be affected by environmental pollution and damage, as well as other organizations of an environmental character.

The expenses of environmental enforcement or regulation, when environmental pollution or damage is verified are borne by the natural or legal person responsible for the pollution or damage.

The order issued by the relevant competent authority, with respect to enforcement and regulation expenses, is of final form and decision.

The competent agency with authority over the environmental situation could decide, depending on the circumstances, to close down, prohibit or interrupt totally or partially activities of natural or legal persons who have caused environmental pollution or damage, and define the respective legal obligations required to improve the situation.

The compliance control is yet weak in Albania due to some objective and subjective reasons. The inspectors' visits to industry to check the compliance is not very well standardized, programmed, prepared and carried out. The manpower for inspection is insufficient whereas the measuring equipment lacks completely. The knowledge of industrial process, cleaner production methods, end of pipe technologies, environmental impacts prediction and assessment is some of the most problematic issue of Albanian inspectorate for environmental protection.

### **Compliance Promotion and Enforcement**

In case of law violation, economic and social activities of natural and legal persons, depending on the circumstances, are closed down, prohibited or interrupted totally or partially by the relevant competent authorities.

The natural and legal persons engaging in existing activities that do not satisfy the conditions for an environmental license, are obliged to satisfy them within the time schedules defined by the inspectors in collaboration with other ministries and central institutions.

The existing activities that do not satisfy conditions for an environmental license within the defined time schedule, depending on the circumstances, could be closed down, prohibited or interrupted totally or partially by the above-mentioned authorities.

Indemnity for damage resulting from environmental transboundary pollution and impairment is arranged for in accordance with the international agreements, conventions, treaties, to which the Republic of Albania is a Party, or in cases where it is not a party, it is arranged for in a manner that is consistent with

generally accepted principles and norms of international rights in the environmental field.

Infringements of the law, when they shall not constitute a penal act, is considered administrative violation in the environmental field as follows:

- a. Transportation without a license of hazardous wastes and substances through the territory and territorial waters of the Republic of Albania.
- b. Import of hazardous wastes and substances for the purpose of preservation, storage or disposal.
- c. Violation of insurance rules defined by the president of the NEA when transporting hazardous wastes and substances.
- ç. Failure to send, when due, data on the environmental situation.
- d. Failure to include information on the environmental situation which includes advice about the manner of action of citizens when adverse consequences to the environment are anticipated.
- dh. Failure of natural or legal persons to inform the people of environmental pollution and damage caused by them, the measures taken to contain or remedy the damage, and the citizens' appropriate manner of action.
- e. Failure to provide buyers or customers with relevant information about hazardous goods and services and their possible adverse effects and impacts.
- ë. Objection to or failure by the natural or legal persons to perform an environmental impact assessment.
- f. Failure to provide designated documents to the authorities responsible for environmental impact assessments.
- gj. Engaging in economic and social activities, which may affect environment, without obtaining the relevant license from the competent state authority.
- i. Violation of admissible limits of pollutant substances defined by the National Environment Agency.
- j. Violation of regulations for the storage, transport deposit, preservation and disposal of hazardous wastes and substances defined by the NEA

In addition to punishment with a fine it may be decided to seize the means which caused environmental pollution and damage or to revoke the license.

The inspectors of the inspectorate of the NEA and its regional agencies in districts have the authority to impose a fine about administrative violation. The authorized NEA's and its REA-s employees, supplied with an authorization from its president, as well as the inspectors to the NEA and REA, have the right to put fines for all administrative contravention. After exceeding the fine liquidation schedules, the execution of punishment decision with fine is obligatory according the administrative code.

The main problem is the collection of the fines which is sometimes impossible. Since the law doesn't provide any penalization for not-liquidation of the fines, we should amend it stressing that in such a case, the activity will be closed as a first step for a short period of time. The non-collection of fines has created a very compromised situation for the inspectors, demoralizing them in penalizing the violations and decreasing the authority of environmental body in the public. Thus, the number of fines is largely reduced since 1997.

As it was already mentioned, the environment inspectorate collaborates with the respective public order forces, in cases of objection to implement the measures required by them. According to the regulation Nr. 68 dt 27.3.1997 "On the cooperation of environmental inspectors with state police and forestry service police, signed by the Minister of Health and Environment, Minister of Public Order and General Director of Forestry and Pastorate it is provided as follows: Environmental inspector when it is necessary cooperate with state police and forestry service police when:

- Natural and juridical persons hamper or not comply with measures proposed by inspectors or group of inspectors
- Important environmental pollution or damages is verified in forests, protected areas, *hungering* without any permission and damages being considered a penal crime.

The compliance promotion encouraging voluntary compliance is not yet implemented in Albania. However, the branches of big foreign companies in different sectors are using such instruments.

The use of financial incentive to this aim is not yet applicable. Natural and legal persons who cause damage to natural resources, which results in environmental pollution and impairment, is compelled to pay compensation for the resulting damage. Natural or legal persons who have suffered harm may present complaints for compensation for damage to the court.

**ALGERIA**

**REPUBLIQUE ALGERIENNE DEMOCRATIQUE ET POPULAIRE  
MINISTERE DE L'AMENAGEMENT DU TERRITOIRE ET DE L'ENVIRONNEMENT**

M. Akli GUELMAOUI  
Directeur Adjoint (Direction de l'application de la réglementation)

**RAPPORT DE PAYS  
SUR  
LES SYSTEMES DE CORPS D'INSPECTION**

## **1. INTRODUCTION**

Le gouvernement algérien a reformulé en 1996 la politique de protection de l'environnement et une stratégie d'actions dont les éléments les plus importants sont notamment :

- L'actualisation des informations relatives à la dégradation de l'environnement contenues dans le Rapport National adressé à la Conférence des Nations Unies sur l'Environnement et le Développement Durable qui s'est tenue à Rio de Janeiro en juin 1992.
- La définition d'objectifs globaux pour faire face aux problèmes majeurs dans divers domaines comme le couvert végétal, la conservation de la nature, la protection de la faune et de la flore, la lutte contre la désertification et l'érosion des sols, **la protection des ressources en eau et du milieu marin, la lutte contre les pollutions d'origines industrielle et urbaine** et l'amélioration du cadre de vie général de la population.
- La proposition de mesures de renforcement du rôle de l'Etat, des collectivités locales et des associations de protection de l'environnement par la création de nouvelles institutions et la promulgation de nouveaux textes à caractères législatif et réglementaire.
- Des propositions d'amélioration des instruments économiques et financiers en faveur de la protection de l'environnement.

Le gouvernement a également conclu, à cette date, à la nécessité de l'élaboration d'un Plan National d'Actions Environnementales (PNAE) soutenu par une stratégie Nationale de l'Environnement (SNE).

## 2. LEGISLATION

Au plan juridique et institutionnel et notamment en ce qui peut être lié à la protection de la mer Méditerranée en général et aux dispositions du protocole tellurique en particulier, ces actions se sont traduites par :

1996

- L'adoption de dispositions réglementaires relevant le prix de l'eau potable et instituant une taxe d'assainissement fixée à 20% du prix hors taxes des eaux potables et industrielles consommées et une tarification régionale de l'eau à usage agricole. (Décret n° 96-42 du 15 janvier 1996)
- La ratification en janvier 1996 de la Convention des Nations Unies sur le droit de la mer signée à Montégo-Bay (Jamaïque) le 10 décembre 1982. (Décret présidentiel n°96-53 du 22 janvier 1996).
- La création d'une inspection générale de l'environnement auprès du ministère chargé de l'environnement dont l'une des missions est d'évaluer périodiquement les mesures et les actions de contrôle et d'inspection, effectuées par les services de l'environnement habilités. (Décret n°96-59 du 27 janvier 1996).
- La création de l'inspection de l'environnement de wilaya (48 entités territoriales au total) chargée de la délivrance des permis, autorisations et visas prévus par la réglementation en vigueur en tant qu'organe principal de l'Etat en matière de contrôle de l'application des lois et règlements relatifs à la protection de l'environnement ou qui y ont trait. ( Décret exécutif n°96-60 du 27 janvier 1996).
- L'adoption de textes réglementaires portant définition du bassin hydrographique et fixant le statut type des établissements publics de gestion (Agences de bassin) dans l'objectif d'une gestion intégrée des ressources. (Décret exécutif n°96-100 du 06 mars 1996).
- La création d'un compte d'affectation spécial intitulé "Fonds national de gestion intégrée des ressources en eaux" alimenté principalement par des redevances liées à la consommation d'eau et destiné à subventionner les actions d'incitation à l'économie de l'eau quel qu'en soit l'usage ainsi qu'à la préservation de cette ressource. (Décret exécutif n°96-206 du 05 juin 1996).
- La promulgation d'un texte législatif modifiant et complétant la loi 83-17 portant code des eaux et comportant d'importantes nouvelles dispositions dont ; l'obligation pour les agglomérations de plus de 100 000 habitants de disposer de procédés et de systèmes d'épuration des eaux usées, l'obligation pour les unités industrielles de procéder au traitement adéquat de leurs effluents, la liste des agents habilités à constater les infractions et le relèvement des amendes et des peines pour les infractions prévues dans la loi. (Ordonnance n°96-13 du 15 juin 1996).
- La création par voie réglementaire de cinq (05) comités de bassins hydrographiques et des cinq (05) agences de bassins hydrographiques correspondant. ( Décrets exécutifs n°96-279/280/281/282/283/284/285/286/287/288 du 26 août 1996)
- Le relèvement par voie réglementaire de la tarification de l'eau potable, industrielle et agricole par institution d'un système de catégories de consommateur et de tranches de consommation liées au volume d'eau consommée. ( Décret exécutif n°96-301 du 15 septembre 1996).
- La création par voie réglementaire des corps d'administrateurs des affaires maritimes, d'inspecteurs de la navigation et du travail maritime et d'agents garde-côtes dont les fonctions incluent l'application des lois et règlements relatifs à la protection de l'environnement marin et du domaine public maritime. ( Décret présidentiel n°96-437 du 1<sup>er</sup> décembre 1996).

- L'approbation d'un accord de prêt entre l'Etat algérien et la banque internationale pour la reconstruction et le développement (BIRD) pour le financement d'un projet de contrôle de la pollution industrielle dans le Nord-Est du pays et concernant plus précisément une unité de sidérurgie et une unité de fabrication d'engrais et produits phytosanitaires. ( Décret présidentiel n°96-446 du 16 décembre 1996).
- La création d'un conseil national de l'eau composé des représentants des ministères concernés dont celui de l'environnement et présidé par le ministre chargé de l'hydraulique. (Décret exécutif n°96-472 du 18 décembre 1996).
- La mise en place de deux (02) commissions permanentes constituées de représentant de l'administration, d'universitaires, de chercheurs, d'experts et de représentants d'ONG's pour assister le haut conseil de l'environnement et du développement durable dont la création remonte à 1994. (Décret exécutif n°96-481 du 28 décembre 1996).

1997

- La mise en place d'une réglementation précisant les modalités de classement et de surveillance des zones de pêche aux coquillages vivants. (Arrêté du 08 juin 1997).
- La mise en place d'une réglementation relative aux autorisations préalables à la fabrication et à l'importation des produits toxiques ou présentant un risque particulier (Décret exécutif n°97-254 du 08 juillet 1997).
- La mise en place d'une réglementation relative à l'exercice de l'activité de stockage et de distribution des produits pétroliers. (Décret exécutif n°97-435 du 17 novembre 1997).
- La mise en place d'une réglementation relative aux conditions d'agrément des groupements d'agriculteurs qui doivent intégrer dans leurs missions l'application de la réglementation de l'environnement en matière d'utilisation des produits phytosanitaires. (Décret exécutif n°97-476 du 08 décembre 1997).

1998

- L'adoption de dispositions relatives à l'organisation des inspections de l'environnement en services. (Arrêté interministériel du 05 mars 1998).
- L'adoption de dispositions réglementaires (décret exécutif n°98-147 du 13 mai 1998), précisant le fonctionnement du "Fonds National pour l'environnement" pour lequel le Ministre chargé de l'environnement est ordonnateur et qui comprend à présent :
  - En recettes : la taxe sur les activités polluantes ou dangereuses pour l'environnement, le produit des amendes au titre des infractions à la réglementation concernant l'environnement et les indemnités au titre des dépenses pour la lutte contre les pollutions accidentelles occasionnées par des déversements de substances chimiques dangereuses notamment dans la mer.
  - En dépenses : le financement des activités de contrôle de la pollution telle que définie par la réglementation concernant l'environnement, le financement des activités de surveillance de l'état de l'environnement, les dépenses relatives aux moyens mis en œuvre dans les interventions d'urgence en cas de pollution accidentelle, les dépenses d'information, de sensibilisation et de vulgarisation, relatives aux questions de l'environnement faites par les institutions nationales de l'environnement ou par des



associations d'utilité publique, les subventions aux associations d'utilité publique dans le domaine de l'environnement et les encouragements aux projets d'investissements qui intègrent des technologies propres.

- La promulgation de la loi n°98-05 du 25 juin 1998, modifiant et complétant le texte législatif 76-80 du 23 octobre 1976 portant code maritime et qui comporte à présent des dispositions qui interdisent ou réglementent par l'octroi d'une autorisation préalable, le déversement, l'immersion et l'incinération en mer de matières de toute nature, susceptibles de porter atteinte à la santé publique et aux ressources biologiques, d'entraver les activités maritimes y compris la navigation et la pêche, d'altérer la qualité de l'eau de mer, du point de vue de son utilisation et de dégrader les valeurs d'agrément de la mer. Cette loi comporte en outre, des précisions relatives aux agents habilités à constater les infractions aux dispositions de la loi portant code maritime.
- L'adoption d'un texte réglementaire portant création d'un haut conseil de la mer (décret présidentiel n°98-232 du 18 juillet 1998). Présidé par le chef du Gouvernement, ce conseil comprend des représentants de l'ensemble des ministères et six personnalités reconnues pour leur compétence dans le domaine maritime. Parmi les questions sur lesquelles se prononce le conseil figure la préservation du milieu marin.
- L'adoption d'un texte réglementaire (décret exécutif n°98-276 du 12 septembre 1998), habilitant les inspecteurs de l'environnement à représenter l'administration chargée de l'environnement en justice. Les inspecteurs peuvent dans le cadre de cette réglementation intervenir dans les actions en demande ainsi que dans les actions en défense sans qu'ils aient pour cela à justifier d'un mandat spécial.
- L'adoption d'une réglementation relative à la définition des principes généraux devant régir l'élaboration du plan "Tel Bahr" (pollution marine) dont le déclenchement relève du Ministre chargé de l'Environnement qui préside le comité. (Arrêté interministériel du 10 octobre 1998).
- L'adoption d'une réglementation modifiant et complétant celle relative aux installations classées et définissant leur nomenclature (décret exécutif n°98-339 du 03 novembre 1998). Sur la base du décret modifié, toute installation figurant dans la nomenclature est soumise préalablement à sa mise en service et selon sa classification, soit à une autorisation, soit à une déclaration. Quatre catégories d'installations sont prévues ; les installations soumises à autorisation du Ministre chargé de l'environnement, les installations soumises à autorisation du Wali, les installations soumises à autorisation du président de l'assemblée populaire communale et les installations soumises à déclaration adressée au président de l'Assemblée populaire communale. La demande d'autorisation pour les deux premières catégories, comporte obligatoirement une étude d'impact sur l'environnement et une étude de danger. La procédure est simplifiée lorsqu'il s'agit d'installations de troisième et quatrième catégories. La nomenclature comporte à l'heure actuelle, 327 rubriques pouvant être subdivisées en plusieurs sous rubriques selon l'importance de l'installation ou de l'activité.

1999

- La promulgation de la loi 99-09 du 28 juillet 1999 relative à la maîtrise de l'énergie qui vise en outre, la réduction de l'impact du système énergétique sur l'environnement par la réduction des émissions de gaz à effet de serre et des gaz d'échappement en milieu urbain par l'utilisation prioritaire et maximale du gaz naturel, le développement de l'utilisation des gaz de pétrole liquéfiés, la réduction progressive de la part des produits pétroliers dans le bilan de la consommation nationale d'énergie, la promotion des énergies renouvelables et l'économie d'énergie aux niveaux de la production de l'énergie de sa transformation et de son utilisation.
- L'adoption d'une réglementation portant composition, organisation et fonctionnement d'une commission de surveillance et de contrôle des installations classées (décret exécutif n°99-253 du

07 novembre 1999). Cette commission est composée de représentants des directions techniques de wilaya. Elle est placée sous la présidence de l'inspecteur de l'environnement de wilaya dont les services assurent le secrétariat permanent. La mission de cette commission est d'effectuer des inspections des installations classées sanctionnées par des procès verbaux et accompagnés, en cas d'inobservation des prescriptions législatives et réglementaires, de propositions de mise en demeure, de fermeture provisoire ou de fermeture définitive de l'installation en cause, selon le cas.

2000

- La ratification par l'Etat algérien du Mémoire d'entente sur le contrôle des navires par l'Etat du port dans la région méditerranéenne. (Décret présidentiel n°2000-58 du 13 mars 2000).

### 3. SYSTEME D'AUTORISATIONS

De ce qui précède et en complément aux éléments d'informations contenus dans le rapport de l'Algérie, établi dans le cadre de la tenue de l'atelier d'experts (16-18 mars 1999) sur le respect et l'application effective de la législation en vigueur en Méditerranée pour la maîtrise de la pollution provenant de sources et activités situées à terre, les bases juridiques en matière d'autorisations dans le domaine de la protection de l'environnement sont les suivantes :

**3.1** Considérées comme un outil de base pour la mise en œuvre de la protection de l'environnement, les études d'impact sur l'environnement ont été introduites dans la législation nationale en 1983 par la loi n°83-03 du 05 février 1983. Au plan pratique, il a fallu attendre la parution du décret exécutif N°90-78 du 25.02.1990 relatif aux études d'impact pour constater une application effective des dispositions de la loi dans ce domaine.

En effet, ce décret explicite plus clairement les modalités pratiques de mise en œuvre de la procédure relative aux études d'impact sur l'environnement. Il précise notamment, les conditions dans lesquelles les préoccupations environnementales doivent être prises en compte dans les procédures réglementaires à respecter pour tout projet de travaux, d'aménagements ou ouvrages et le contenu de l'étude d'impact sur l'environnement qui doit comprendre successivement :

- a) Une analyse de l'état initial du site et de son environnement portant notamment, sur les richesses naturelles et les espaces agricoles, forestiers, maritimes, hydrauliques ou de loisirs, qui pourraient être affectés par les travaux, aménagements ou ouvrages projetés.
- b) Une analyse des effets sur l'environnement et en particulier sur les sites et paysages, la faune, la flore, les milieux naturels et les équilibres biologiques, sur la commodité du voisinage (bruits, vibrations, odeurs, fumées, émissions lumineuses...) ou sur l'hygiène et la salubrité publique.
- c) Les raisons pour lesquelles le projet présenté a été retenu.
- d) Les mesures envisagées par le maître de l'ouvrage ou le pétitionnaire pour supprimer, réduire et compenser les conséquences dommageables du projet sur l'environnement, ainsi que l'estimation des dépenses correspondantes.

Les dispositions du décret précisent également les conditions dans lesquelles l'étude d'impact sur l'environnement est rendue publique ainsi que les conditions dans lesquelles le ministre chargé de l'environnement peut se saisir ou être saisi pour avis de toute étude d'impact.

Les éléments saillants à relever dans la procédure ont trait :

- aux coûts inhérents à l'établissement de l'étude qui relèvent du maître de l'ouvrage.
- à l'obligation faite au maître de l'ouvrage de déposer l'étude d'impact en trois (03) exemplaires au niveau du Wali territorialement compétent qui transmet une copie au ministre chargé de

l'environnement pour établissement d'une décision de prise en considération et aux fins d'examen du contenu de l'étude.

- à l'approbation, avec ou sans réserves, ou le rejet de l'étude d'impact qui relève exclusivement du ministre chargé de l'environnement.

Les différents intervenants dans la procédure d'étude d'impact sont :

- Le promoteur du projet qui détermine si son projet doit faire l'objet d'une étude d'impact et qui en assure la réalisation, par lui-même ou en faisant appel au concours d'un bureau d'étude.
- Le Wali qui notifie au promoteur la décision de prise en considération établie par le ministre chargé de l'environnement. Le Wali prend un arrêté prescrivant la publicité de l'étude par voie d'affichage au niveau du siège de la wilaya, des communes concernées et dans le voisinage des lieux où les travaux, aménagements ou ouvrages sont envisagés. Il s'assure également de l'insertion des avis dans la presse dans deux quotidiens nationaux au moins, aux frais du promoteur. Il appartient également au Wali de désigner un commissaire enquêteur pour consigner sur un registre ouvert à cet effet, les avis, les vœux, les réclamations écrites ou verbales qui peuvent être portés à sa connaissance par le public au sujet des travaux, aménagement ou ouvrages, objet de l'étude d'impact durant une période de deux mois après la prise en considération. Le résultat de l'enquête publique ainsi que l'avis motivé du Wali sont ensuite transmis au ministre chargé de l'environnement.
- Les services du ministre chargé de l'environnement qui examinent le contenu de l'étude d'impact et les résultats de l'enquête publique et qui établissent un rapport comportant également les avis des départements ministériels intéressés par le projet.

**3.2** Les installations classées, régies précédemment par les dispositions du décret exécutif n°88-149 du 26 juillet 1988 le sont à présent par les dispositions du décret n°98-339 du 03 novembre 1998 dont la nomenclature a été complétée et publiée en annexe. Cette réglementation complète dans un sens la réglementation relative aux études d'impact en incluant les installations classées dans la procédure d'étude d'impact sur l'environnement.

La nomenclature des installations classées comporte 327 rubriques dont certaines sont elles-mêmes subdivisées en plusieurs sous rubriques selon l'importance de leurs dimensions ou l'importance des activités qui y sont exercées.

Le décret n°98-339 distingue deux catégories d'installations ; celles qui font l'objet d'une autorisation et celles qui font l'objet d'une déclaration.

En ce qui concerne la catégorie des installations soumises à autorisation, celle-ci est subdivisée en trois sous catégories :

- a) les installations soumises à autorisation du ministre chargé de l'environnement.
- b) les installations soumises à autorisation du Wali.
- c) les installations soumises à autorisation du président de l'Assemblée populaire communale.

Les installations des sous catégories a) et b) sont obligatoirement soumises à la procédure d'étude d'impact au sens de la loi relative à la protection de l'environnement et au décret exécutif N°90-78 et à une étude exposant les dangers que peut présenter l'installation en cas d'accident et justifiant les mesures propres à en réduire la probabilité et les effets déterminées sous la responsabilité du demandeur. L'étude d'impact préalablement approuvée par le ministre chargé de l'environnement fait partie intégrante du dossier déposé, pour l'obtention de l'autorisation, par le demandeur.

L'accord ou le rejet est notifié à l'intéressé :

- Par le président de l'Assemblée populaire communale dans un délai n'excédant pas un (1) mois pour les installations de la sous catégorie c).
- Par le Wali dans un délai n'excédant pas quarante cinq (45) jours pour les installations de la sous catégorie b).
- Par le Wali dans un délai n'excédant pas quatre vingt dix (90) jours pour les installations de la sous catégorie a) qui sont soumises à autorisation du ministre chargé de l'environnement.

L'autorisation d'exploitation de l'installation est subordonnée au certificat de conformité établi par les services de la protection civile sur la base du rapport de visite de la commission de surveillance et de contrôle. Par ailleurs, le ministre chargé de l'environnement, le Wali ou le président de l'Assemblée populaire communale peut, selon le cas et dans certaines conditions, accorder, à la demande de l'exploitant, une autorisation pour une durée provisoire. Cependant le bénéficiaire de l'autorisation d'une durée limitée, qui désire obtenir son renouvellement, est tenu de déposer une nouvelle demande qui est soumise aux mêmes formalités que celle de la demande initiale.

La deuxième catégorie est celle des installations soumises à déclaration au président de l'Assemblée populaire communale. Les installations soumises à simple déclaration sont celles qui ne présentent aucun danger ou inconvénient soit pour la commodité du voisinage, soit pour la santé, la sécurité, la salubrité publique, soit pour l'agriculture, soit pour la protection de la nature et de l'environnement, soit pour la conservation des sites et monuments.

Les dispositions communes à l'ensemble des catégories d'installations classées comportent les éléments ci-après :

- Lorsqu'il est exigé un permis de construire pour une installation nouvelle, l'exploitant est tenu d'adresser sa demande d'autorisation ou de déclaration en même temps que la demande dudit permis.
- Les prescriptions générales ou spécifiques applicables aux installations classées sont déterminées par arrêté du ministre chargé de l'environnement après avis des ministres concernés.
- L'activité principale de l'installation conditionne la procédure d'autorisation ou de déclaration.
- Les installations existantes doivent se conformer aux dispositions du décret relatif aux installations classées dans les délais déterminés par des arrêtés y afférents.
- Outre les organes habilités en la matière par les lois et règlements en vigueur, le contrôle et la surveillance des installations classées sont exercés sous l'autorité du Wali par la commission de surveillance et de contrôle.

**3.3** L'immersion de déchets est réglementée par le décret exécutif n°88-228 du 05 novembre 1988, pris en application des dispositions de la loi n°83-03 relative à la protection de l'environnement, du Protocole relatif à la prévention de la pollution de la mer Méditerranée par les opérations d'immersion effectuées par les navires et aéronefs fait à Barcelone en 1976 et de l'ordonnance n°76-80 du 23 octobre 1976 portant code maritime, modifiée et complétée par la loi n°98-05 du 25 juin 1998. Ce décret définit les conditions, procédures et modalités d'immersion de déchets susceptibles de polluer la mer, effectués par les navires ou aéronefs.

L'immersion de déchets est interdite :

- Lorsque les déchets contiennent une ou plusieurs substances énumérées à l'annexe 1 du Protocole, sauf si ces substances ne s'y trouvent qu'à l'état de contaminants et à condition qu'elles n'y aient pas été ajoutées délibérément en vue de leur immersion.
- Dans les zones maritimes présentant des intérêts particuliers du point de vue de la sécurité et sur les plans économiques et écologiques, notamment ceux mentionnés en C de l'annexe III du Protocole.
- Dans les eaux territoriales pour les déchets embarqués dans un port ou un aéroport étranger.
- A moins de 12 miles de la terre la plus proche et à une profondeur inférieure à 2000 mètres pour les déchets tels que conteneurs, déchets métalliques ou volumineux, navires aéronefs, plates-formes et autres ouvrages placés en mer, épaves de navires et d'aéronefs.

L'immersion de tout autre déchet est subordonnée à autorisation du ministre chargé de l'environnement, qui peut se présenter sous la forme d'un permis général ou d'un permis spécifique valable pour une seule opération. Les demandes de permis d'immersion sont adressées au ministre chargé de l'environnement qui transmet un exemplaire :

- a) au Wali de la wilaya où sont implantées les unités de production, de regroupement ou de stockage des déchets à immerger qui procède immédiatement à une enquête publique pour complément d'information.
- b) à chaque ministre concerné pour étude et avis.

Les opérations d'immersion ne peuvent être effectuées qu'en présence d'une commission désignée à cet effet et composée des représentants qualifiés des ministres de l'environnement, des transports et de la défense nationale.

**3.4** Les rejets d'effluents liquides industriels sont réglementés par les dispositions du décret exécutif n°93-160 du 10 juillet 1993 en vertu desquelles, les rejets d'effluents liquides sont soumis à autorisation du ministre chargé de l'environnement après avis du ministre chargé de l'hydraulique. Cette autorisation n'est accordée que si les valeurs maximales des paramètres fixées en annexe du décret ne sont pas dépassées et si les rejets sont conformes à des conditions techniques définies, par arrêté du ministre chargé de l'environnement, et relatives à la qualité et de l'utilisation des eaux réceptrices, à la faune et à la flore, aux exigences sanitaires, à l'importance et à la nature des rejets.

**3.5** Les rejets des huiles et lubrifiants font l'objet de dispositions réglementaires fixées par le décret exécutif n°93-161 du 10 juillet 1993. Le décret interdit le déversement dans le milieu naturel, par rejet ou après ruissellement ou infiltration, et l'évacuation dans les réseaux d'assainissement, même équipés de stations d'épuration, des huiles et lubrifiants, qu'ils soient neufs ou usagés. Le déversement des huiles et lubrifiants dans le milieu naturel peut cependant, être autorisé par arrêté du ministre chargé de l'environnement après avis du ministre chargé de l'hydraulique. L'arrêté d'autorisation fixe des limites que le déversement ne doit pas dépasser compte tenu des caractéristiques des appareils dans lesquelles les huiles et lubrifiants ont été utilisés et du degré de nocivité des produits et de l'importance des nuisances qui peuvent en découler.

**3.6** Les émissions atmosphériques de fumées, gaz, poussières, odeurs et particules solides des installations fixes font l'objet de dispositions réglementaires fixées par le décret exécutif n°93-165 du 10 juillet 1993. A titre transitoire, le ministre chargé de l'environnement fixe par arrêté les délais à l'issue desquels, les émissions dans l'atmosphère de gaz, de fumées, de poussières, d'odeurs ou de particules ne dépassent pas à la source, les normes fixées par la réglementation en vigueur.

**3.7** l'activité de stockage et de distribution des produits pétroliers est soumise à l'obtention d'une autorisation préalable (décret exécutif n°97-435 du 17 novembre 1997), qui n'est accordée que si l'installation, préalablement à la mise en service est conforme aux règles de protection de l'environnement. (Installations classées).

**3.8** La fabrication et l'importation des produits toxiques ou présentant un risque particulier sont soumis à l'obtention d'une autorisation préalable (décret exécutif n°97-254 du 08 juillet 1997) délivrée par le ministre chargé du commerce. Le dossier de demande d'autorisation inclut pendant l'autorisation préalable ou la déclaration relative aux installations classées.

**3.9** Les huiles à base de polychlorobiphenyle (P.C.B), les équipements électriques qui en contiennent et les matériaux contaminés par ce produit sont soumis aux dispositions du décret n°87-182 du 18 août 1987. En vertu de ce décret, le déversement des huiles à base de PCB dans le réseau d'assainissement ou dans la nature est interdit. En outre, le remplacement de l'huile contenue dans les équipements électriques par une huile minérale est subordonné à une autorisation délivrée par le ministre chargé de l'environnement.

#### **4. CONTROLE DE LA CONFORMITE**

Selon les dispositions du décret n°96-60, **l'inspection de l'environnement de wilaya est l'organe principal de l'Etat en matière de contrôle de l'application des lois et règlements relatifs à la protection de l'environnement ou qui y ont trait.**

Les missions principales des inspections sont :

- La réalisation des enquêtes de pollution
- Le recensement des installations classées en vue du recouvrement de la taxe sur les activités polluantes ou dangereuses pour l'environnement.
- Le traitement des dossiers de demande d'autorisation ou de déclaration d'une installation classée.
- Le traitement des dossiers d'étude d'impact sur l'environnement.
- Le conseil et l'orientation des collectivités locales et des industries
- L'établissement de procès verbaux d'infraction à la législation relative à la protection de l'environnement, la recommandation au Wali et au ministre des sanctions administratives et pénales.
- Le contrôle de la qualité des eaux de baignade surtout pour les wilaya côtières.
- L'inspection et le contrôle des installations d'épuration et,
- La contribution à la mise en œuvre du programme du ministère chargé de l'environnement en matière de protection de l'environnement (information, éducation et sensibilisation du public).

L'inspecteur de l'environnement est notamment habilité à intervenir et effectuer des inspections dans l'ensemble des domaines requérant une autorisation ou un permis du ministre chargé de l'environnement.

##### **4.1 En matière d'études d'impact sur l'environnement**

Bien que le décret relatif aux études d'impact ne contienne pas de dispositions sur les suites à donner à l'étude d'impact et sur sa portée juridique, l'inspecteur assure le suivi régulier du déroulement de la procédure d'étude d'impact. Il réalise des inspections, une fois l'étude d'impact approuvée par le ministre chargé de l'environnement, notamment pour évaluer la mise en œuvre des mesures de protection de l'environnement énoncées dans l'étude d'impact.

**4.2** La mise en œuvre de la procédure relative aux installations classées est complétée par les dispositions du décret n°99-253 du 07 novembre 1999 qui portent composition, organisation et fonctionnement de la commission de surveillance et de contrôle des installations classées.

Cette commission, placée sous l'autorité du Wali et composée des membres des différents services de la wilaya représentant les départements ministériels concernés, est placée sous la présidence de l'inspecteur de l'environnement de wilaya dont les services assurent le secrétariat permanent.

La commission effectue des inspections sur la base d'un programme de visite semestriel soumis au Wali mais peut, lorsque les circonstances l'exigent, effectuer des inspections non programmées.

Les inspections effectuées par la commission de contrôle et de surveillance sont sanctionnées par des procès-verbaux adressés au Wali dont copie est transmise, sous quinzaine au plus tard, au ministre chargé de l'environnement.

En cas d'inobservation des prescriptions édictées par la législation et la réglementation en vigueur, la commission propose au Wali les mesures nécessaires, notamment :

- la mise en demeure de l'exploitant ;
- la fermeture provisoire de l'installation ;
- la fermeture définitive de l'installation.

**4.3** Les opérations d'inspection des conditions d'immersion des déchets susceptibles de polluer la mer relèvent de l'inspecteur de l'environnement et du service des gardes côtes. En fonction des résultats des

inspections, vérifications et contrôles effectués et en cas de situation grave résultant des opérations d'immersion, le ministre chargé de l'environnement doit prendre les mesures suivantes :

- a) mise en demeure
- b) suspension provisoire du permis
- c) retrait définitif du permis notamment lorsque les opérations d'immersion contreviennent aux dispositions de la loi relative à la protection de l'environnement.

**4.4** Dans le cas des rejets d'effluents liquides industriels, la non conformité des conditions de rejet par rapport aux prescriptions techniques définies par l'acte d'autorisation, est constatée par l'inspecteur de l'environnement de wilaya. Le Wali met en demeure le responsable de l'installation de rendre ses rejets conformes aux prescriptions de l'acte d'autorisation dans un certain délai et décide, en cas d'inaction de celui-ci à l'expiration du délai, l'arrêt provisoire de l'installation. Dans ce cas, sur rapport du Wali, le ministre chargé de l'environnement prononce le retrait de l'autorisation. Les autorisations peuvent être modifiées ou retirées d'office notamment sur proposition de l'inspecteur de l'environnement, si les conditions de l'acte de prescription ne sont plus respectées.

**4.5** En ce qui concerne les déversements des huiles et lubrifiants dans le milieu naturel, il incombe implicitement à l'inspecteur de l'environnement de rechercher et constater les infractions aux dispositions de la loi relative à la protection de l'environnement.

**4.6** En matière d'émissions atmosphériques de fumées, gaz, poussières, odeurs, et particules solides des installations fixes, l'inspecteur de l'environnement procède à des prélèvements périodiques d'échantillons et à des contrôles inopinés. Les prélèvements d'échantillons et les méthodes d'analyses des gaz, des fumées, des poussières, des odeurs et des particules solides sont effectuées conformément aux normes et techniques en vigueur. La procédure et les délais liés aux prélèvements et aux analyses d'échantillons sont définis par arrêté du ministre chargé de l'environnement.

Lorsque l'exploitation d'une installation présente des dangers, inconforts ou inconvénients graves pour la sécurité, la salubrité, la commodité du voisinage ou pour la santé publique, le Wali doit, sur rapport de l'inspecteur de l'environnement, mettre l'exploitant en demeure de prendre les dispositions nécessaires pour faire cesser et disparaître les dangers et inconforts constatés. Faute par l'exploitant ou le gestionnaire de se conformer, dans le délai imparti, à cette mise en demeure, la suspension provisoire du fonctionnement d tout ou partie de l'installation peut être prononcée, sur proposition de l'inspecteur de l'environnement, par arrêté du Wali territorialement compétent.

**4.7** L'activité de stockage et de distribution des produits pétroliers fait l'objet de contrôles périodiques, dont les modalités sont fixées par arrêté interministériel. Les agents habilités à opérer ces contrôles sont les agents relevant du ministre chargé des hydrocarbures ainsi que par les inspecteurs de l'environnement du fait que les installations correspondant à l'activité de stockage et de distribution des produits pétroliers sont incluses dans la nomenclature des installations classées.

**4.8** La fabrication et/ou l'importation des produits toxiques ou présentant un risque particulier relèvent de la réglementation applicables aux installations classées et sont donc soumis aux contrôles opérés, dans ce cadre par l'inspecteur de l'environnement.

**4.9** Les huiles à base de polychlorobiphényle (P.C.B), les équipements électriques qui en contiennent ainsi que les matériaux contaminés par ce produit et qui sont abandonnés ou destinés ne peuvent être éliminés ou traités que dans des conditions déterminées par arrêté du ministre chargé de l'environnement. L'inspecteur de l'environnement est de ce fait chargé de constater les infractions en la matière.

## 5. PROMOTION DE LA CONFORMITE

Le seul élément susceptible de représenter un encouragement concret de la conformité volontaire est la possibilité pour le promoteur d'un projet ou le responsable d'une installation déjà existante, de bénéficier d'une aide financière par le biais du fonds national de l'environnement, s'il opte pour une technologie propre. Ce moyen n'a pas été très utilisé jusqu'à présent.

## 6. APPLICATION EFFECTIVE

Les instruments juridiques pour imposer la conformité aux exigences environnementales comprennent les sanctions administratives prévues par la réglementation et les sanctions pénales prévues par les lois notamment celle relative à la protection de l'environnement.

Avant toute sanction, l'exploitant ou le gestionnaire est mis en demeure de rendre son installation ou ses travaux conformes aux exigences environnementales requises.

Les sanctions administratives prévues par la réglementation en vigueur et pouvant être prononcées soit par le Wali territorialement compétent soit par le Ministre concerné, sur proposition de l'inspecteur de l'environnement ou les autres agents habilités, se traduisent par :

- La fermeture provisoire de l'installation ou la suspension des travaux ou activités à l'origine du problème constaté.
- La suspension temporaire ou définitive de l'autorisation ou du permis délivré pour l'exercice de l'activité, l'exploitation d'une installation ou l'utilisation d'un produit réglementé.

Les sanctions pénales sont prononcées par la justice lorsqu'elle est saisie soit par l'inspecteur de l'environnement, habilité à le faire aussi bien en demande qu'en défense depuis la promulgation du décret n°98-276 du 12 décembre 1998, soit par le Wali territorialement compétent.

Comme souligné dans le rapport précédent, les peines d'emprisonnement sont encore efficaces alors que les amendes prévues par la loi n°83-03 du 05 février 1983 relative à la protection de l'environnement apparaissent aujourd'hui dérisoires et ne produisent pas l'effet dissuasif escompté.

A titre d'exemple, les peines prévues par la loi n°83-03 relative à la protection de l'environnement et concernant la mise en route et l'exploitation des installations classées sont les suivantes :

Article	Objet (en ref article de la loi)	Peines prévues (*)
122	Défaut d'autorisation (Art.76) Défaut de déclaration (Art.77) ou non respect des dispositions de l'arrêté	Fixation des dispositions à respecter Amende de 2 000 à 20 000 DA Récidive : prison 2 à 6 mois et/ou amende de 20 000 à 100 000 DA
123	Non respect de délais fixés dans l'application des dispositions arrêtées (Art. 122)	Amende de 2 500 à 25 000 DA Suspension d'activité Travaux d'office aux frais de l'exploitant
124	Non respect d'une mesure de fermeture ou de suspension de l'activité (Art. 87)	Amende de 10 000 à 100 000 DA et/ou prison de 2 mois à 2 ans
132	Mise en route d'une installation avec défaut d'étude d'impact et de procédure d'autorisation	Amende de 2 000 à 20 000 DA et le cas échéant : - arrêt des travaux - remise en état des lieux
133	Mise en route d'une installation après refus d'autorisation	Amende de 5 000 à 500 000 DA et/ou prison de 2 mois à 2 ans portée au double en cas de récidive Arrêt des travaux et remise en état des lieux.

\* 1US\$ environ 80 DA



## **7. EVALUATION ET INFORMATION EN RETOUR**

Depuis la mise en place de la totalité des inspections prévues à travers l'ensemble du territoire national (48 inspections de l'environnement de wilaya en 1999), plusieurs actions d'évaluation de l'efficacité de la législation et de la réglementation applicables ainsi que de l'efficacité et du pouvoir coercitif des clauses environnementales ont été entreprises par les services du ministère chargé de l'environnement avec parfois l'appui d'experts indépendants de l'administration chargée de l'environnement. Ainsi, les enquêtes menées auprès des inspections de l'environnement ont mis en évidence plusieurs éléments importants :

### **7.1 En matière d'études d'impact sur l'environnement.**

Il apparaît que les travaux, aménagements ou ouvrages figurant sur la liste limitative prévue par la loi et annexée au décret relatif aux études d'impact sur l'environnement, échappent à la procédure d'étude d'impact, car devant être régis par des dispositions réglementaires spécifiques qui n'existent pas encore. Il faut cependant relever que malgré cette limitation, une centaine d'études d'impact sur l'environnement, dont 70% environ dans le domaine de l'industrie agro-alimentaire, ont été soumises en 2000 pour être examinées par les services du ministre chargé de l'environnement.

Les cahiers des charges types, permettant d'assurer une qualité et un contenu minimal de l'étude d'impact et imposant une qualification suffisante à l'auteur de l'étude d'impact, ne sont pas inclus dans la procédure réglementaire. Cette lacune amène souvent les services chargés de l'examen des études d'impact à demander au promoteur des informations supplémentaires ou à développer un aspect de l'étude, considéré comme important. L'allongement des délais qui en résulte pour statuer sur l'étude d'impact n'est pas toujours bien accueilli par les promoteurs.

Un autre aspect important tient au fait que les dispositions réglementaires en vigueur ne comportent pas d'éléments relatifs aux suites à donner à l'étude d'impact sur l'environnement. Cependant, malgré cette lacune, l'inspecteur de l'environnement contrôle la mise en place et le fonctionnement des mesures énoncées dans l'étude. L'étude d'impact étant élaborée sous la responsabilité du promoteur, il est considéré que les mesures énoncées l'engagent pleinement.

### **7.2 En ce qui concerne les installations classées**

Bien que le nouveau décret fasse apparaître clairement les compétences des autorités qui accordent l'autorisation ainsi que l'objet de l'autorisation et que cette nouvelle définition fortifie la signification juridique d'autres décrets se référant à la notion d'installations classées, les arrêtés types pour l'ensemble des rubriques figurant dans la nomenclature n'ont pas encore été élaborés en totalité. Cette situation pose problème aux inspecteurs dans la mesure où les prescriptions spécifiques sur lesquelles ils doivent se baser pour réaliser les inspections et contrôles ne sont pas disponibles.

### **7.3 En matière d'émissions atmosphériques**

Le décret qui régit les émissions atmosphériques d'installations fixes renvoie à des normes de pollution atmosphérique qui ne sont encore fixées. Au plan pratique, le contrôle des émissions atmosphériques est inexistant.

### **7.4 En matière d'eaux usées**

Malgré les diverses obligations prévues par la législation et la réglementation en vigueur pour les collectivités locales et les industries de collecter, traiter et épurer les eaux usées, les dispositions techniques restent peu claires. Les normes ne sont encore fixées et les prescriptions techniques relatives aux types de traitement auxquels les stations d'épuration doivent recourir ne sont pas non plus fixées. Des lacunes existent également dans le domaine des eaux usées industrielles dans la mesure où les conditions techniques pour l'obtention de l'autorisation de déversement, qui devraient être fixées par arrêté

du ministre chargé de l'environnement ne sont pas encore établies et adoptées même si les valeurs limites maximales sont annexées au décret exécutif n°93-160. Cette situation n'empêche pas les inspecteurs de l'environnement d'intervenir, de prélever des échantillons et de les analyser ou d'obliger l'industriel à faire analyser à ses frais par des laboratoires privés ses rejets. En l'absence d'agrément des laboratoires intervenant dans ce domaine, les résultats analytiques obtenus ne sont pas utilisables comme preuve devant la justice.

En conclusion, les éléments fondamentaux identifiés par les évaluations ont trait à :

- l'écart entre le nombre d'intervenants en matière d'inspection et d'application effective, qui a pourtant sensiblement augmenté depuis la mise en place de l'organisation des services de l'inspection en 1998 et le nombre d'installations ou d'activités à inspecter qui ne cesse de croître (6500 nouvelles installations classées recensées en 2000).
- les missions confiées aux inspecteurs de l'environnement qui sont très vastes et ne permettent pas la prise en charge de l'ensemble des aspects.
- La position juridiquement faible de l'inspecteur, notamment lorsqu'il s'agit d'actions en justice, en raison des lacunes dans le système de normes et de standards dans de nombreux domaines (rejets d'eaux usées et industrielles, émissions atmosphériques, normes de milieux, essentiellement).

Ces aspects peuvent être illustrés par les bilans des activités menées par les 48 inspections au cours des deux dernières années.

Année	Nombre d'interventions	Nombre de mises en demeure	Nombre de fermetures provisoires	Nombre de cas portés devant la justice
1999	4512	970	182	39
2000	6694	2081	392	66

Les interventions opérées couvrent notamment les installations industrielles (plus de 50 000 installations classées recensées), les installations municipales, les rejets d'huiles et lubrifiants, les huiles à base de PCB, les produits dangereux périmés. Seules certaines des actions portées devant la justice se sont traduites par des décisions de fermeture définitive, le reste a donné lieu à paiement d'amendes.

# **BOSNIA AND HERZEGOVINA**

## **COUNTRY REPORT**

**on control, compliance measures and enforcement of  
regulation concerning the land – based sources of pollution**

### **BOSNIA AND HERZEGOVINA**

2

January 2001

## 1. RELEVANT BACKGROUND INFORMATION

### 1.1. Administrative and institutional set up in B&H

#### ◆ Administrative framework

According to Dayton Peace Accord (Annex 4 – Constitution of B&H), B&H became administratively decentralized state, organized into two entities: Federation B&H (FB&H) and Republic of Srpska (RS), both having the high degree of autonomy. F B&H is decentralized, and it consist of ten Cantons with the high degree of decision freedom in establishment of authoritative functions and their execution, while the Republic of Srpska is centralized entity.

#### ◆ Institutional framework

Institutional structure of Bosnia and Herzegovina is such that there is no institutions that would handle the environmental issues on the state level. This comes out from the Dayton Peace Accord, by which the environmental issues are in jurisdiction of each of two entities, FB&H and RS. Therefore, institutions dealing with this problematic are at the entity level, and in the FB&H also at the Cantonal level.

#### • ***Institutions at the FB&H Level***

- Federal Ministry of Physical Planning and Environment, whose main functions and tasks are the subject of urbanism, space planning, settlements planning, as well as the construction and protection of environment;
- Federal Ministry of Agriculture, Water Management and Forestry, which covers three important named sectors. Water sector within this Ministry performs the administrative tasks related to the issuing of water management licenses and permissions, as well as the water management related inspection tasks; and
- Public Enterprises for "Watershed Area of Adriatic Sea Basin", and Public Enterprise for "Watershed Area of the Sava rivere basins". They have the operative-technical management of water resources in Adriatic catchment area i.e. Sava river basin, respectively. Those Public Enterprises are founded on the provisions of the Water Law (Official Gazette B&H, no. 18/98). They are situated in it is towens Mostar i.e. Sarajevo respectively, and are responsible for the Adriatic Sea basin i.e. Sava river basin. In accordance with the Federal Water Law, the enterprises manage Federal water management facilities and plants, performs the monitoring of all water resources, and have responsibility for: preparation of all strategic documents and sublaws, investments, exploitation, usage and maintenance of water management utilities, provision of expert opinion and consultations. (See Map 2).

In ten FB&H's Cantons, the responsible bodies are:

- Cantonal Ministries for Construction, Physical Planning and Environment, working in the field of space planning and environmental protection within the cantonal borders.
- Cantonal Ministries of Agriculture, Water Management, and Forestry, also performing the administrative tasks such as issuing of water management licenses and permissions that are by Law in the jurisdiction of cantons.

#### • ***Institutions at the RS Level***

- Ministry for Urbanism, Residential-Communal Activities, Civil Works, and Ecology performs the tasks of physical planning, carrying out the plans, as well as the environmental protection.
- Ministry of Agriculture and Water Management

- **Inter-entity bodies**

Environmental Steering Committee of B&H (ESCB&H) is inter-entity body that coordinates the work related to the environmental issues between the two entities.

Steering Committee has eight members. Four of them are appointed by the Government of Federation B&H, and four by the Government of Republic of Srpska.

- Commission for coordination of water management issues is body responsible for the cooperation between the responsible ministries of both Bosnia and Herzegovina's entities related to the water issues, having the goal of removing the eventual collision in water management. This commission has eight members. Four of them are appointed by the Government of Federation B&H, and four by the Government of Republic of Srpska.

## 2. LEGISLATION

Before the war Environmental Law did not exist in B&H. Environmental issues were treated only within one Chapter within "Urban Planing Law" which was adopted in 1974 and reversed and supplemented in 1981 and 1987.

At present, each of the two Entities in B&H, Federation of B&H (F B&H) and Republic of Srpska (RS), have its own Laws on physical planing, water, air, solid waste, agriculture, forest and other Laws relevant for the Environment sector. Moreover, some of the 10 Cantons belonging to F B&H have already drawn its own Laws.

### 2.1. Physical planing and land use legislation

F B&H - The Law on Physical Planning (from 1974, revised 1987), is still in force in Federation of B&H. This Law has a general character and treats the following issues: urbanism, physical planning, construction issues and environmental protection issues which are treated only within one Chapter called "Protection and Improvement of Human Environment" consisted of numerous Articles related to the different environment aspects (air, solid waste, land, water, soil and forest protection). The Law stipulates that water, land and forests are also specifically treated under specific Laws on water, agriculture and forests.

RS - The Law on Land Use Planning, (from 1996) has a general character and treats all physical planning and construction rules as well as environmental protection. In its first article the Law insists on healthy and protected environment and it stipulates that land use planning is regulated also by special Laws, as for example water, agriculture, forest etc.

*Administrative and regulative functions concerning this legislation are given to the Entitie's and Cantonal's (in FB&H) Ministries of Urban Planing and Environment.*

### 2.2. Solid waste legislation

Even former Yugoslavia did not have a Law on solid waste management. Still, there is no comprehensive Law that would specially treat waste problems in B&H.

Both entities have overtaken from the pre war period Cod on collection, production and market of raw and waste material, and both entities has Laws on Municipal works.

Currently is in the process Project aimed at development of a comprehensive solid waste master plan for Bosnia and Herzegovina including activities in both Entities

(AEA Technology plc, UK). The conclusions of that project suggest that there is no effective primary or secondary legislation in the Bosnia and Herzegovina relating to the regulation of waste management activities.

*Solid waste management is in general the responsibility of Entities and Cantonal's (in FB&H) Ministries of Urban Planning and Environment.*

### **2.3. Air legislation**

No effective legislation exist, in either Entity, for the regulation of emissions to the atmosphere and air quality.

Laws on Physical Planning (F B&H) and The Law on Land Use Planning (RS) addressed air protection issues.

Chapter III from the Law on Physical Planning (F B&H) "Protection and Improvement of Human Environment", Paragraph V "Air protection". Articles-56 – 64 regulate the air pollution. These articles define obligation to minimize air pollution that must not exceed "the prescribed limit". According to the Law, air emission standards are to be established by the agency responsible for urbanism, as well as the agencies responsible for health and industry. Municipalities may impose stricter local air standards, as well as define concentrations which constitute a critical "alert condition".

*Administrative and regulative functions concerning this legislation are given to the Entities and Cantonal's (in FB&H) Ministries of Urban Planning and Environment.*

### **2.4. Soil, forest and agricultural land legislation**

The issue of soil, forest, and land protection and controlled usage is generally treated under the Law on Physical Planning in F B&H and Law on Land Use Planning in RS.

The special emphasize is given to the following areas:

- forests and other vegetation,
- agricultural land of high value or of specific usage,
- areas endangered by the erosions or floods,
- karst, flatlands, degraded forests, soils, etc., and
- endangered areas that require a special protection.

The detailed instructions on protection and usage of forests and agricultural land are given under the specific Forest Law and Law on Agricultural Land.

F B&H - Law on Agricultural Land (1997) defines "the notion, management, protection and setting up of agricultural land". This has to be in accordance with the main physical planning and land use and protection documents. These duties are mainly in the general competence of cantons and municipalities.

RS - The Law on Agricultural land (1997) determines the responsibilities of the Ministry of Agriculture, Forestry and Water management and of municipalities and towns for protection of agricultural land. These responsibilities must be assumed in accordance with the main planning documents, named basic documents on land protection and use of agricultural land.

F B&H - Decree on Forests (1993) assigns the main management functions to a Public Forest Company, whereas the administrative and regulative functions are given to the Ministries of Agriculture, Water management and Forestry.

RS - The Law on Forests (1994) defines forests as goods of general, i.e., public interest. Also in this respect the main management role is assigned to the public forest company, while the administrative and regulatory functions are given principally to the RS Government and for technical and regulatory tasks, to the Ministry of Agriculture, Water management and Forestry (MoAWF).

*Administrative and regulative functions concerning those legislations are given to the Entities and Cantonal's (in FB&H) Ministries of Agriculture, Water management and Forestry.*

## **2.5. Water legislation**

F B&H - The Federal Water Law (WL) from 1998, comprises 244 articles. The WL does not contain sufficient provisions on permits, legal procedures, international standards, and conditions for water use, and thus fails to give sufficient guidelines to the users and to the regulatory authorities.

RS - Water Law (1998) which could be defined as comprehensive, comprises 136 articles, divided in the ten chapters. According to the Water Law the water management consists of planning, development, maintenance, construction and reconstruction of facilities, water protection, flood protection, technical investigations and studies, water management master plan drafting, and other activities.

Both water Laws (F B&H and RS) require for its complete application, the adoption of numerous decrees and regulations, i.e., (general) governmental/ministerial decisions which are mainly, for the time being overtaken from the pre war period such as:

- main catchment areas and water courses;
- rules relative to water management balance;
- water management balance and water regime management plan;
- erosion areas;
- provisions on agricultural irrigation and fish-farms water quality;
- provisions on quality of water for drinking, food production, sanitary, hygienic and recreational needs;
- water protection plan;
- classification of waters and categorization of water courses for various uses;
- provisions relative to harmful and hazardous substances and sanitary-technical condition for waste of used waters;
- programme for systematic water and waste water control;
- conditions (staff, equipment etc.) for firms authorized to control surface and groundwater quality;
- general water fee rates and method for their calculation;
- specific water fees rates and amounts;
- instructions relative to the method and time limit for payment of specific water fees ;
- inventory of existing water management facilities financed by grants, taxes or public contribution;
- etc.



### 3. PERMITTING

Application of legislation is largely based on a system of permits and self-monitoring, with environmental inspectors periodically checking emission levels to verify the accuracy of operators report.

*Permitting is generally responsibility of relevant Entities and Cantonal Ministries.*

#### 3.1. Entities and Cantonal's (in FB&H) Ministries of Physical Planning and Environment are in charge for the following:

- Construction of buildings, plants water facilities and infrastructures etc.
  - > urban permit what consider evaluation of technology, location, and discharge parameters
  - > construction permit what consider evaluation of the concrete project solutions and check whether the conditions from urban approval will be fulfilled
  - > technical supervision and permit for usage what consider checking of adjustment of constructed with designed, reaching the allowed pollution range and/or pollution).

- Air pollution

Successful monitoring of air pollution does not exist. There are some measurements that can give total air pollution load. No effective legislation for the regulation of emissions to the atmosphere and air quality, as well as the effective framework for environmental permitting exist.

According to the Laws, construction and operating permits are required for all individual emitters of hazardous or other air pollutants.

Permits are also required in areas in which the aggregate or cumulative effects of emissions result in exceeding established limits.

Entities failing or technically unable to meet established air quality standards may be considered for a special exclusionary permit.

However, a waiver shall not be granted in cases which impact settled areas, natural areas and other protected areas. Such permit shall be issued by the Commission for Urbanism, Civil Engineering, Housing and Communal Services.

- Land use

According to the Laws on Physical Planning, each activity which course change of primary foreseen land usage according to the Physical Plans, are subject to permitting process.

- Biodiversity and nature

The Law on Physical Planing superficially covers the protection of nature and bio diversity. This law defines the ways to obtain the permission to build a factory, treatment plant, transport the environmental hazardous material, register a company, etc.

#### 3.2. Entities and Cantonal's (in FB&H) Ministries of Agriculture, Water Management and Forestry are in charge for the following:

- Water Management permits

The object of a water management permit is to define the purpose of the water usage, the manner in which is to be cared out as well as other conditions that regulate the water use. The same applies respectively to discharge of waste water and discharge of gas into the atmosphere as well as for disposal of solid and liquid waste.

A water management permit is required for all structures for which a water management has been or should have been issued, except for activities explicate exempted.

Water management permits are required for undertakings concerning the use of water ( surface water, thermal and mineral water, coastal waters) discharge of waste water and disposal or discharge of hazardous and harmful matters in to public water resources.

A permit is needed also for discharge of impounding reservoirs.

In addition to the water , the scope of water management permits covers other environmental elements as well: a permit is required for disposal and discharge of above said matters into agricultural and forestry land and into the atmosphere.

F B&H - According to the Federal WL, legal competence in water sector licensing is divided between Federal and cantonal authorities The division of competence is determined by the nature and the scope of the undertaking. At the Federal level, the competent authority is the MoAWF. In cantons, the competence lies at the level of cantonal ministries, but the competent authority is to be defined in cantonal water laws.

To ensure compliance with the water permits, the Federal Ministry or the cantonal licensing authority may issue a water management order obliging the permit holder to perform or to refrain from a certain. In case of non-compliance with the order, the Ministry or the corresponding cantonal authority may cancel the permit temporarily or permanently.

RS - The permit defines the purpose, manner and conditions of water use. The validity of the permit is temporary and can not exceed ten years. The permit is not transferable.

The authority responsible for issuing permits is also in charge of temporary suspension or limitation of permits or for their abolition, if the permit holder, after notice, does not respect the conditions of the permit, or if specific water quantity and quality conditions (lack of water, drought etc.) call for it .

#### **4. MONITORING AND COMPLIANCE CONTROL**

Application of environmental legislation, regulations, and standards is the responsibility of inspectors from the departments operating under the relevant Ministry.

Inspection provides execution of laws, other regulations and defined strategy, directly executes law and other regulation, provides executive and immediate inspection works, provides experts support, participate in law and sub - laws preparation and other business that relevant Ministry is in charged for.

For the moment, there are 3 inspectors in each related Federal Ministries in charge for control whether some project meet all conditions to get permit to start to work. Situation in cantons and municipalities differs from one to another.

At this moment there is no adequate qualified employees in cantons and municipalities.

#### **4.1. Entities and Cantonals (in FB&H) Ministries of physical Planning and Environment through there Inspectors is responsible for the following:**

- Construction

Urban development and infrastructure projects have no regular control but from case to case.

When violation is verified, procedure should be according the law as follows: official requirement for correction measures within strict time period including the temporary closure, after that goes re-inspection and if correction was not done, penalties for that facility and responsible person and continuation of closure. There were no permanent closures, mainly because of the strong influence of politic structure pressure in that municipality.

According to the Laws on Physical Planing inspectors have the right to stop construction of facilities that may provoke danger for health and living environment.

- Air

Today, with basic services restored, a growing profusion of private vehicles, and a recovering industrial base, air quality in urban centers is once again suffering. Automobiles are now a major source of air pollution, a problem made worse by the older vehicles still in use and their lack of modern anti-pollution technology. New legislation is now being drafted in response to this need.

Plan for reducing polluting industrial emissions does not exists, as well as control of pollution from exhaust fumes.

Emission standards were set-up before the war by sub-law in 1976. They are rather old and 10-15 times higher then actual standards in Europe.

The new standards on air emission were set up in Canton Sarajevo - by Law in May 1999. The limitation values are harmonized with actual in EU countries. The following type of emission standards where set-up:

- ◆ Emission standards in the air;
- ◆ Emission standards for stationary source of pollution;
- ◆ Emission standards for heating places.

According to the Physic Planing Law (FB&H) the Government shall regulate emissions sources such as heating equipment, vehicles and transportation equipment, hazardous materials emissions, fixed engines and boilers as well as their fuel. Protection zones are established for areas with critical/chronic air pollution. These zones are determined by a short-term development plan or by action of the Municipal Assembly. The Municipal Assembly will inventory emissions points and measure output, organize inspection programs, develop remedial or minimization plans, report figures. The Municipal Assembly shall form a commission to implement the critical air pollution program.

A municipality, through a commission or otherwise, is responsible for air pollution control. Further regulations are issued by the agency for urban issues. Overall monitoring of air pollution is to be conducted by the Commission appointed by the Committee for Urbanism, Civil Engineering, Housing and Public Services.

The Municipal Assembly may promulgate air pollution regulations covering areas to include: central heating plants along with burners and fuels types, critical emission sources, designated green areas, vehicles. It may also prohibit or restrict emissions from inefficient industrial plants. Owners of buildings or sites which emit pollutants are responsible for implementing required abatement or minimization measures as required.

- Solid Waste

In the pre-war period solid waste from urban areas was transported to the local landfills (approximately one in each municipality) and disposed without any sanitary measures and in many cases without any control. Methodology of sanitary disposal of communal solid waste practically was not used at all. Municipal governments had control over Public Enterprises. During the war period numerous temporary landfills were in use. After the war, reconstruction processes of public services in the whole Country included solid waste management as well. Landfills that are still in use are classified as dumps usually with inadequate capacity, except in the case of towns of Mostar and Stolac where sanitary landfills exist. Separate collection was introduced several years ago, but it is still negligible. The main reason is lack of recycling companies that would make advantage of it.

According to the pre-war investigations industrial solid waste was the source of highest pollution. Bigger industrial sections had their own landfills placed near or in their own closed areas. There is no assessment on solid waste production projection for the after-war period. It is obvious that restructuring of the industrial section is necessary, which can influence industrial solid waste production. Solid waste that do not belong to the highly risk category can be either recycled or disposed on sanitary landfills. Hazardous waste, that mainly is co-disposed with industrial waste.

At the moment, there is no inspection and control carried out within industrial plants, domestic wastewater disposal, incineration and landfills.

Some B&H regions introduced so called "Ecological Police" that is operating on the field, providing inspection over ecological protection in the Canton areas, mostly on waste disposal. Their responsibility is to report environmental impact events (polluting made by citizens or companies) that are regulated with local regulations, and even to make (small amounts usually) mandate punishments, paid on the field.

#### **4.2. Entities and Cantonals (in FB&H) Ministries of Agriculture, Water Management and Forestry through there Inspectors are responsible for the following:**

- Water management

Coastal waters observations and monitoring (quantity and qualities of the rivers), according to the pre-war regulations were executed by Federal and Republic Meteorological Institutes through the main hydrology gages network. Gage network on the territory of Republic was established by Republic Meteorological Institute.

Water quality control for the lakes and water storage was not done, although it was defined by regulation.

Underground and spring waters were not systematically investigated. Water quality control in those cases was done according to the need and on request of the users.

The above described organizational scheme of monitoring in B&H was broken at the beginning of the war and monitoring was terminated. Reconstruction of hydro-meteorological network is still without any significant results. Such situation does not enable efficient control of polluters and users and monitoring of transboundary pollution.

B&H has no state institution which deals with investigation and monitoring of agriculture production improvement. There are institutions but not mutually connected and without coordination, so there is no monitoring and control on usage of chemical substances in agriculture production.

Monitoring of substances residual in soil, water and plants was not established and there is no information on contamination of water. Also there is no information on number, types and quantity of pesticides that are in use now.

Before the war, monitoring and control of quality of discharged wastewater has been carried out only at the discharge points into the rivers, usually once in two years, depending on the pollution load and industry production variation.

The applied methodology expressed pollution load in population equivalent (PE), according to which were calculated fees to be paid. This fee was asked only from industries, according to the existing laws.

Present situation is difficult to assess, because most of the industry do not work during the last five years. Even nowadays it is hard to find industry that has short-term program of reconstruction and development.

At present, industrial pollution is monitored and is based on population equivalent and it is charged since the end of the year 1998, what is in accordance with polluter pays principle.

- Forests

War activities, fires, presence of pests and insects, caused a lot of damage to many forest complexes, especially coniferous forests, condemning them to destruction.

Forest management is performed on the principles of production continuity taking care of polyvalent functions of forests such as climate, fire protection, health, landscape, etc. All forest areas where managed based on forest management basis. These bases are prepared every 10 years by previously defined method of data gathering and processing.

In F B&H, process of forest's revision still did not commence, although the lifetime of previous bases expired. In those cases sustainable forest management is done based on Annual Plans for certain areas.

The situation in RS is much more favorable, the revisions are in progress, with exception of mined areas.

The Firefighting Services with their monitoring stations exist in all forest areas. The monitoring of more sensitive and endangered areas, such as pine forests, sub-mediterranean and mediterranean forests, is done regularly. As a result of war activities many monitoring stations are left without the equipment, so that their re-equipping is in progress.

Public enterprises in both entities have responsibility to manage and to produce and sell timber. All surface of forestland is divided in 88 Forestry Economic areas which responsibility is to prepare 10 years plan for forestry maintenance. Government and local communities have to approve this plan. Also, government sets the minimum price for timber.

Present Federal Law have been overtaken from the pre war period, and is not suitable. The pre-war creators did not predict existence of Cantons. That is why the control of cutting is very poor and the "black cutting" and "black export" of raw wood became normal way of doing business in this sector.

Also, the number of small wood mills, informal cottage operations is blooming without real control and these small and new wood mills are big danger for sustainable management of forest.

## 5. ENFORCEMENT

Regulatory functions (especially enforcement) are weakly managed. Consequently, most polluters have no obligations to monitor, plan mitigation measures, and invest in water pollution control.

Failure in reporting environmental information and releasing pollutants without a permit are considered violations subject to penal action. Inspectors have access to plants and installations. Operators have to keep inspectors informed and inspectors can impose penalties if regulations or permit conditions are violated.

Law on Physical Planning regulate also environmental economy delicts and penalties. They were mostly fees within urbanism, construction and environment protection fields.

According to this Law new projects are obliged to elaborate so called "Study on impact to the environment". In practice, those studies were very often very poorly prepared and not seriously taken in to consideration.

As the new Environmental Law is not yet elaborated and adopted, new or existing projects still do not need EIA studies.

Economic instruments have no significant role for the demand and supply of environmental finance in our country except special water fee, because use of economic instruments put most of the emphasis on the revenue raising potential of central budget for other purposes rather than environmental function.

- Air emission

There are no air emission charges in B&H.

- Solid waste - hazardous waste or industrial waste

There are no special charges on hazardous waste in B&H

According to the Laws, industrial waste, if amounts are huge, need to be treated or disposed separately, by the company (or license to work would not be provided).

- Land use

There are no charges/taxes on land use with clear environmental relevance in our Country.

There are no special environmental charges/taxes on fertilizers, pesticides or other chemical agents used in agriculture.

- Water extraction charges

F B&H - The administrative activities in the water sector are financed from various types of water fees. A decision on four of five special water fees was enacted in December 1998. According to this decision, the following fees have been determined:

- water abstraction fee: 0.1 DM/m<sup>3</sup>;
- water pollution fee: 2 DM/person/equivalent
- fee for hydro power plants: 2% of the production price; for thermal power plants: 1% of the production price; and
- gravel extraction: 1 DM/m<sup>3</sup>.

RS - Government defines rates and amounts of general and specific water management fees.

General water management fee in RS:

- 1,5% of the gross salaries and/or of gross earnings coming from copyright and patent rights.

Specific water utilization fee in RS:

- for agriculture 0.01 DM/m<sup>3</sup>
- for irrigation : 0.006 DM/m<sup>3</sup>
- for fish farming in artificial reservoirs: 0.013 DM/m<sup>3</sup>
- for industry, construction, mining, energy, forestry, water management, transport, hotel trade, commerce and tourism: 0.045 DM/m<sup>3</sup>
- for financial, technical and professional services: 0.040 DM/m<sup>3</sup>
- for water exploitation activities (public and other companies) municipal water supply companies: 0.035 DM/m<sup>3</sup>
- for power generation(except thermal plants), besides the special fee for their own water consumption, also 0.00015 DM/kWh of produced energy, and
- producers of mineral drinking water pay 0.03 DM per liter of produced water.

Specific water fee for water protection in RS:

- It is decided that water protection fees are: from 1.0 DM/person equivalent (P.E.) for less than 10,000 P.E. to 14,700 DM plus 0.00483 DM per P.E. for more than 2.000.000 P.E.

- Sewerage

There are no waste water and sewage non-compliance fees in our country.

- Tree cutting

Uncontrolled and illegal tree cutting is still a big problem in Bosnia and Herzegovina. The present charges are mostly economical, not environmental instrument for prevention of deforestation. Beside the poorly regulated tree cutting charges/taxes relevant to the environmental protection, the incapability of authorities to stop illegal and uncontrolled process of tree cutting represents even bigger problem.

Federal Forest Law regulates that legal persons managing the forest should direct 20% of their profit from wood sale to the simple biological reproduction of forest, and 3% of their profit to the enlarged reproduction of forest. 15 % of the profit should be directed for the forests in the karst area. Furthermore, certain penalties related to the protection of forests and forest ecosystem are also introduced through the same Law. Unfortunately, these regulations are not strictly obeyed.

In RS, Law on Excises from January 1<sup>st</sup>, 1999 tax the export of:

- round building material - deciduous and conifer tree - all classes 10%
- lumber building material tree - deciduous and conifer tree - all classes 3%

In FB&H excises are not determined for export of wood building material (April 1999).

## **6. UP TO DATE COUNTRY PROFILE CONCERNING COMPLIANCE AND ENFORCEMENT OF LEGISLATION IN B&H**

Development of a national legal system in general and a legal system for environmental protection in particular have not obtained significant progress i.e. concrete results for the last two years in B&H.

Slow legislative processes have delayed development of regulatory framework. This was due to significant burden on Parliament to enact a large volume of new legislation in the current period of economic and political reforms and due to the fact that environmental legislation was not a priority issue.

In some cases problems arose because lack of capacity to draft high quality environmental laws, as well as the fact that frequently, consultations with relevant stakeholders were carried out at a late stage.

At present time, within the Ministries of Agriculture, Water Management and Forestry, the priority is given to the reconstruction of the agricultural sector, as well to forest exploitation. Their importance for the country cannot be questioned, but the water sector finds itself undervalued. Position of water sector in those Ministries is also weakened because some public competencies relative to the water sector belong also to the Ministries of Physical Planning and Environment.

During the last two years International Community recognized need for change of Water sector structure and ordered a study named "Institutional Strengthening of Water Sector in FB&H" and afterwards similar study named "Institutional Strengthening of Water Sector in RS".

The key institutional recommendations made by the study which are planed to be implemented in the recent future in B&H are the following:

1) Integration of environmental and water administration within one Ministry

The new Ministry of Environment and Water Management (MoEWM), in FB&H and in RS will be responsible for environmental strategies, policy making, quality standards for the environment, supervision of relevant sector institutions, and international co-operation and preparation of ratification of relevant conventions. The Ministry shall also prepare drafts for relevant legislation and issue regulations as authorised by the law. Moreover, it would be responsible for ensuring adequate financing of its subordinate bodies and promotion of environmental matters.

The recommended creation of a common environmental and water ministry would facilitate the preparation of a comprehensive Environmental protection Law, integrating different licensing, supervisory and monitoring procedures within the same framework.

The Ministry would apply its policy guidelines through the established 7 new River Basin Bodies in both entities, FB&H and RS.

2) Establishment of 7 new River Basin (Districts) Bodies ( RBBs)

The River Basin Bodies will be responsible for regulatory functions, such as enforcement, supervision, monitoring and planning. The River Basin Bodies should also focus on increasing public awareness of environmental protection.

Ultimately, the River Basin Bodies shall be responsible for all regulatory and enforcement functions in the water and the entire environment sector. The scope of the responsibilities to be assumed by the RBBs cover:

- regulation of water resources management, including planning, monitoring, inspection, and introduction of water use and pollution fees;
- control of soil contamination;
- control of air pollution;
- environmental impact assessment related to physical planning and approval of urban plans;



- nature and forest conservation; and
- biodiversity and wildlife.

### 3) Establishment of Environmental Licensing and Enforcement Authorities

- Environmental Licensing Authorities

The proposed River Basin Bodies (RBB) will provide an appropriate administrative level for the majority of licensing functions. To fulfil requirements for fair licensing, the following recommendations should be followed:

- independent Licensing Units (LU) should be established within the RBBs;
- the organisational link between the RBBs and the Licensing Units should be purely administrative;
- the composition of the LUs should be prescribed by law ;
- the LUs should employ legal expertise; and
- an effective system of appeal should be established to review the decisions of the LUs.

For large-scale undertakings with major environmental impacts extending over several river basins, a higher level of authoritative decision-making is required. In these cases, the licensing authority should be given to a Federal and RS Licensing Bodies (FLB and RSLB).

- Enforcement Authorities

To safeguard the impartial exercise of enforcement powers, the right of decision should be given to the LUs within the RBBs.

The RBB inspectors will be responsible for initiating the enforcement procedure against anyone violating the water and other environmental legislation or the authoritative decisions made by the LUs or the FLB and RSLB.

The LUs will be competent to decide on enforcement measures regarding all environmental licenses, including those issued by the Federal and RS LB.

The LUs will have the competence to issue licenses for, as a rule, all undertakings with environmental consequences limited to one River Basin. The River Basin Boards may decide to entrust the licensing functions to one Licensing Unit shared by two or more River Basins.

The FLB and RSLB will be competent to issue licenses for large-scale undertakings with major environmental impacts extending over several river basins. The division of licensing powers between the LUs within RBBs and the FLB and RSLB would be prescribed by law. The division may be based on technical characteristics of the undertakings (power production capacity, population equivalent of wastewater, etc.). Also, the need for environmental impact assessment, determined by a specific law, may be set as a criterion for handling the case at the Federation level.

Besides licensing competence, the FLB and RSLB would have the appellate authority to review decisions, concerning both licensing and enforcement, made by the LUs.

According to the prepared Terms of Reference the two Pilot River Basin Bodies are to be established in the beginning of this year. Pilot Projects will be financed by the EU and it will last 18 month.

**CROATIA**

# **COUNTRY REPORT ON INSPECTORATE SYSTEM IN CROATIA**

Mojca Luksic, (B.Sc.), Advisor – Republic of Croatia, State Water Directorate

## ***1. ENVIRONMENTAL REGULATORY CYCLE***

### **I. POLICY PLANNING**

After Croatia's establishment as an independent republic, it started to develop a new legal system, including new laws and regulations on the environment and nature protection.

In October 1994, the Law on Environmental Protection was adopted. This "umbrella law" is, along with the Constitution, the legal basis for regulating environmental protection. It determines environmental protection objectives and principles, sets out the rights and responsibilities of actors in the environmental sector, stipulates who is liable for environmental pollution and has to clean up, and defines environmental inspections.

The Republic of Croatia is committed to preserve its water resources, as pointed out in the Water Act (NN 107/95) and corresponding bye-laws, starting from the following principles expressed in the Water Act:

- (i) Water is an irreplaceable precondition for the life and activity. It is the duty of all persons to protect carefully its quality, and use it sparingly and rationally under equal conditions by law;
- (ii) Water shall be managed in accordance with the principle of integrity of the water system and the principle of sustainable development which meets the needs of the present generation without threatening the rights and possibilities of the future generation to meet their needs;
- (iii) The territorial water management units are the water basins and catchment areas as hydrographic and economic units. The borders of administrative – territorial units shall not present obstacles for integrated water management in such areas;
- (iv) In preparing and adopting of plans which are the basis of water management, the starting point is the obligation of integrated environmental protection and achieving of general and economic development of the Republic of Croatia;
- (v) For water use exceeding the limits of permissible general use, as well as for any deterioration of water quality, a compensation shall be paid in proportion to the benefit gained, or to the degree and extent of the impact on water quality;
- (vi) For any investments in improvement of the water system, which consists of all watercourses and other water bodies, water estate and water-related structures in given area (water basin or catchment area), the sources of financing of such works must be defined.

Except in the Water Act, these principles have been elaborated in over 40 bye-laws and, regarding financing of water management activities, also in the Water Management Financing Act (NN 107/95) which defines various charges and their respective levels.

The government administration bodies are organized in accordance with the Act on Organization and Scope of Ministries and other Government Administration Bodies (NN 48/99 and 15/00). The Act defines their scope and competencies. The Ministries and State Directorates having direct influence on environmental protection through regulations proposed to the government of the Republic of Croatia are, as follows:

The *Ministry of Environmental Protection and Physical Planning* is in charge of developing general environmental policy and creating conditions for sustainable development, participating in international environmental cooperation, implementing laws, approving enforcement regulations, performing administrative and expert duties in environmental protection, carrying out environmental inspections, monitoring, and promoting environmental education and research. The Ministry of Environmental Protection and Physical Planning carries out administrative and other tasks related to the general policy of environmental protection, providing of conditions for sustainable development, protection of air, water, sea, flora and fauna in integrated interaction.

The *State Water Directorate*, in charge of all activities related to water management and the water management system, monitoring and co-ordination of water management development with the requirements of overall economic development; regulation of watercourses and other water bodies, protection from floods and ice, erosion and torrents; hydroamelioration irrigation and drainage; management and use of water-related estate; protection of water and sea from pollution from land, providing of water for supplying of communities with drinking water and industry with technological water; use of water power, planning and co-ordination of development and construction of public water supply systems and waste water disposal systems of national interest; inspection in the field of water pollution control, water use and protection from water. The State Water Directorate proposes to the Government of the Republic of Croatia the level of water use charge and the charge for water protection from pollution (tariff), which are the parts of the total price of water delivered.

In addition to the above-mentioned governmental bodies, at the local level, there are 20 *counties* and the metropolitan administration of the City of Zagreb which influence the environmental protection by their respective decisions.

Agency for water management activities *Hrvatske vode* is a Government agency (legal entity). The task of *Hrvatske vode* is to ensure permanent and unimpeded carrying out of public services and other tasks in water management in the scope defined by plans and in accordance with the available funds provided for the purpose under corresponding legislation. Within its legal powers, *Hrvatske vode* passes administrative and other acts and makes decisions on issues important to water management, regarding preparing of basic plans for water management, maintenance of water-related structures, protection from detrimental effects of water, water use, water pollution control, managing of public water estate, professional supervision and engineering in construction of water-related structures and collecting of funds for financing of such works and activities. The seat of *Hrvatske vode* is in Zagreb, and there are five water management departments: in Zagreb, for the Sava river basin, in Osijek for the Drava and Danube river basin, in Rijeka for the Istrian and Littoral basin, in Split for the Dalmatian basin, and in Zagreb for the catchment area of the City of Zagreb.

## II. OBJECTIVES

The overall policy of Croatia in the development of economic and regulatory instruments has three fundamental objectives. Firstly, the country is determined to adopt the European practices in environmental regulations to its specific conditions. Secondly, the progressive introduction of a developed public revenue system entails consequences for environmental management. Croatian environmental managers are seeking to remedy these drawback by new ad hock instruments. Thirdly, the extremely precarious funding situation for environmental protection is being coped with by activating the available mechanisms. Like the most other measures, progress in environmental regulations towards general European practices is conditioned by the availability of resources. They are scarce in the light of the difficult economic situation and the need to cope with urgent and severe consequences of the war. While the pace of progress is therefore slow, the overall direction is clear. It does not only include charging practices with regard to ambient quality. It also includes the development of environmental management in enterprise.

In accordance with the Water Act the general policy objectives, priorities, principles for protection of water, environmental protection are:

- protection of water from pollution (water protection) shall be carried out for the purpose of protection of human lives and health and of the environment, and allowing of harmless and unimpeded water use for various purposes,
- water protection is achieved through supervision of water quality and sources of pollution, prevention, limiting or prohibition of actions and behavior likely to affect the water quality and the environment in general, as well as by other activities aiming at protection and improvement of water quality and its suitability for use for various purposes,
- hazardous substances, for the purpose of this Act, are substances, energy and other agents which by their composition, quantity, radio-active, toxic, cancerogenic, mutagenic and other properties adversely affect human lives and health and the environment,
- hazardous substances shall not be discharged or introduced into water or deposited in areas where it may result in pollution or contamination, except under the conditions determined by the Water Act and regulations based on this or some other act,
- the Government of the Republic of Croatia defines which substances and in which quantities are considered as hazardous substances,
- water classification defines the grades of water corresponding to water quality conditions in the sense of their general environmental function and to conditions of water use for various purposes,
- in order to prevent deterioration of water quality and to protect the environment in general, the limit values of hazardous and other substances shall be prescribed, as follows: for technological waste water before its release into public sewerage system or other receiving water, for water being released, after treatment, from the public sewerage system into natural receiving water, for waste water and substances discharged into sumps and collector tanks,
- legal entities and physical persons that, within the scope of their industrial or other activity introduce, release or dispose hazardous substances likely to cause water pollution shall be obliged before discharging into the public waste water disposal

system or other receiving water, to eliminate, partly or completely such substances in accordance with the provisions of this and other Acts, or regulations based thereon.

In accordance to the National Pollution Control Plan the overall objective for water pollution control, respectively nutrient reduction, is to protect the environment and the life and health of the people by providing adequate water for different purposes of utilization. The priorities regarding water pollution control and water management are ranked as follows:

- Preservation of water resources which are still clean (i.e. upstream river stretches of quality class I and groundwater), as future drinking water resources;
- Avoidance of further degradation of actual water quality;
- Restoration or removal of sources of pollution concerning existing or planned drinking water resources, as well as other resources where is used for different human and economic purposes (usually water resources of class II and III);
- Strengthening of monitoring of sources of water pollution and potential accidental emergencies.

The objective of the National Water Pollution Control Plan is that water shall be managed in accordance with the principle of integrity of the river system and the principle of sustainable development.

National Water Pollution Control Plan includes the precautionary principle, the use of BAT, the control of the pollution at source, the "polluter pays" principle and commitment to regional cooperation and shared information among the neighboring countries.

The National Pollution Control Plan define the measures for water protection as follows:

- administrative measures,
- measures for preserving the water quality,
- measures for prevention and reduction of water pollution,
- implementing measures,
- schedule for implementing the measures.

### III. LEGISLATION

The following selected major environmental laws are in force:

- Law on environmental protection
- Bay-Law on Conditions for Issuing Permits for Performing Professional Environmental Activities
- Contingency Plan for Accidental Marine Pollution in the Republic of Croatia
- Bay-Law on Beach Water Quality Standards
- Bay-Law on Environmental Impact Assessment
- Bay-Law on Quality Standards for Liquid Oil Fuels
- Law on Air Quality Protection
- Bay-Law on Recommended and Limit Ambient Air Quality Values
- Bay-Law on Limit Values on Pollutant Emission from Stationary Sources into the Air
- Bay-Law on Substances Depleting the Ozone Layer
- Law on waste
- Bay-Law on requirements for Handling Hazardous Waste
- Law on Nature Protection

The following selected major water management (water protection) legislation are in force:

- Water Act
- Act on Water Management Financing
- National Water Pollution Control Plan
- Ordinance on water classification
- Ordinance on water related hazardous substances
- Regulation about requirements to be met by legal entities who deal with activity of waste water disposal
- Regulation on accounting and payment of water protection fee
- Regulation on conditions to be met by laboratories performing water quality analysis
- Regulation on issuing of water management legal acts
- Regulation on maximum allowed concentrations of hazardous substances in waste water (standard effluent)



## IV. PERMITTING

How the control of pollution from the land based sources and activities is under the responsibility of Water Act here will be described in detail permitting system in accordance with this Act and its by-laws.

### *Water management legal acts*

Water management legal acts are issued to secure the uniform water regime and to establish water management in accordance to the Water Act.

The water management legal acts are: the water management terms, the water management approval, the water management permit and the permit ordinance.

### *Water management terms*

The water management terms determine the conditions to be met by the documentation for construction of new and reconstruction of existing structures, and for other works which are not regarded as construction, that may permanently, periodically or temporarily affect the water regime.

The water management terms are issued by Hrvatske vode, and by exception the water management terms are issued by Hrvatske vode with confirmation of the State Water Directorate for some specific cases specified by Water Act.

### *Water management approval*

The legal entity of physical person which has obtained the water management terms must, before the start of the construction or other works, apply for the water management approval from the relevant body. The water management approval confirms that the documentation for construction or other works is prepared in accordance with the water management terms.

The validity of water management terms, for which the approval has not been required, shall expire by expiration of the period of the two years from the date of the issuing.

The validity of water management terms for which the approval has been issued shall expire by expiration of the period of two years from the date of issuing of the approval if the date the application for construction permit have not been commenced.

### *Water management permit*

The water management permits regulates the permission for water use and defines the purpose, location, method, conditions and extend of water use and discharging of waste water: hazardous or other substances that may pollute or contaminate water.

The water management permit is required for water use and discharging of waste water in connection with industrial and other activities, and with activities involving water intake and use and discharging of waste water.

The water management permit is issued by the relevant County office, based on previously obtained opinion from Hrvatske vode. Exceptionally, the water management permit is issued by Hrvatske vode, with confirmation of State water Directorate for:

- industrial and other activities involving the intake and use of the water from the interstate watercourse or discharging of waste water into an interstate watercourse,
- for activities in chemical, textile, leather, food-processing, metal, construction, petrochemical and other industries involving hazardous substances in the technological process,
- activities and services in sea and river transport (ports and harbours),
- hydropower plants with the capacity of 20 MW or more,
- transport and storage of oil, gas and other hazardous substances,
- water supply systems exceeding the capacity of 10 l/sec,
- running the public sewerage systems.

The water management permit is issued for specific period, no longer that 15 years (in practice no longer that 5 years).

In order to prevent deterioration of water quality and to protect the environment in general, the limit values of hazardous and other substances are prescribed in water management permits.

#### *Permit ordinances*

The permit ordinance is a document issued along with the water management permit in order to adjust the behavior and activities of the permit holder with the conditions and responsibilities resulting therefrom. The permit ordinance orders the holder of the water management permit to take an action, carry out an investment or to abstain from some action in order to eliminate the risk possible or already existing disturbance, or non-compliance with the conditions and responsibilities under the water management permit, and to establish the conditions in compliance with this act.

The permit ordinance is issued by the same body which has issued the water management permit.

Permit ordinance may be issued during the entire period of validity of the water management permit.

The copy of the water management and permit ordinance are sent to the relevant water management inspector. The water management inspector shall advise the State Water Directorate to cancel the water management permit and permit ordinance, or propose temporary withdrawal of the permit, permit ordinance for following reasons:

- if the holder fails, within a specified period, to carry out the activities or investment, or to obtain from some activities as required by the permit ordinance,
- if non-compliance with the permit ordinance is likely to result in serious hazard to human lives and health or in economic problems.

The detail procedure related to the issuing of the water management legal acts is specified within Regulation on issuing of water management legal acts. The procedures of issuing of water management legal acts are subject to the provisions of the General Administrative Procedure Act.

Table 1. Total number of issued water management legal acts in the Republic of Croatia

	YEAR	W.M. TERMS	W.M. APPROVALS	W.M. PERMITS	W.M. PERMIT ORDINANCES
ISSUED BY HRVATSKE VODE	1999.	2.051	1111	484	254
	2000.	908	49	200	144
WITH APPROVAL OF S.W.D.	1999.	72		35	
	2000.	54		32	

Source: State Water Directorate

The water management permit is also required for production and traffic of chemical and their derivatives which, after use, get into water. State Water Directorate issues these water management permits. The detail procedure related to the issuing of the water management legal acts is specified within Regulation on issuing of water management legal acts. The procedures of issuing of water management legal acts are subject to the provisions of the General Administrative Procedure Act.

The total number of issued water management permits for production and traffic of chemical and their derivatives which, after use, get into water was in 1999. 395 and for 2000. it was 126.

## V. COMPLIANCE CONTROL

### ENVIRONMENTAL INSPECTION

The control over the implementation of the legal regulations and prevention of uncontrolled environmental sea pollution in the Republic of Croatia is split among several ministries: Ministry of Environmental Protection and Physical Planning (environmental inspection), Ministry of Maritime Affairs, Transport and Communications (maritime inspection), Ministry of Agriculture and Forestry (fishery inspection), Ministry of Health (sanitary inspection) and State Water Directorate (water management inspection).

Environmental inspection is one of the departments in the Inspection Division in the Ministry of Environmental Protection and Physical Planning. The head of the division is assistant minister, and there are four inspection departments for environmental protection, nature protection, for building and urban planning.

The environmental protection inspection legal basis is the Environmental Law ("Official Gazette", 82/94 and 128/99) and this inspection supervises the implementation of the environmental protection standards and measures, and the manner and conditions of work of legal persons authorized for performing the environmental protection action. The control of the sea water quality at beaches is the responsibility of the environmental inspection deals as well as accidental sea pollution from unknown sources.

The nature protection inspection supervises the work of public institutions and the persons who manage or execute activities in the protected parts of nature or in any other way influence their quality.

The building inspection supervises the work of the state bodies and participants in the building process.

The urban inspection supervises the work of the state administration bodies and the local self-government units in the process of drafting, adopting and implementing the documents on the urban planning and monitoring of the situation.

The maritime inspection is one of the Department in the Ministry of Maritime Affairs, Transport and Communications, the legal basis of this inspection is the Maritime Code ("Official Gazette", 17/94, 74/94 and 43/96). The maritime inspection is among others, dealing mostly with sea pollution problems from ships but this inspection is always present if sea pollution from land based sources occurs.

The fishery inspection within the Ministry of Agriculture and Forestry has a legal basis in the Fishery Law ("Official Gazette", 74/94, 57/96 and 46/97) and deals with pollution problems when fish and shellfish are threatened.

The sanitary inspection within the Ministry of Health has a legal basis is the Law on sanitary inspection ("Official Gazette", 27/93) and deals with pollution problems and its effects on human health.

There is a very detailed explication on water management inspection within the State Water Directorate in the report, because the WSD is responsible for pollution coming from land based sources.

When sea pollution or from land based sources or by known and by unknown sources occurs, mostly all inspection are involved each in its part of jurisdiction. That's why it is necessary to establish a closer co-operation within all inspections involved in sea pollution.

Pursuant to the Law on Environmental Protection ("Narodne novine", 82/94, 128/99), and related laws, environmental inspection is responsible for enforcement of the laws, related regulations and other separate acts, and over work conditions and methods

employed by legal persons, is carried out by environmental inspectors of the Ministry of Environmental Protection and Physical Planning.

In 1998, environmental inspectors have performed 623 reports, over 2800 official records, decisions, conclusions on execution permits, and instituted legal proceedings, inclusive of complaints and non-administrative matters. Number of legal proceedings (80) compared to the number of inspections performed looks disproportionate; however, experience shows that many companies gradually manage to find ways to comply with environmental requirements, in spite of often difficult financial situation. They are especially successful if faced with appropriate deadlines for removal of deficiencies instead of instituting legal proceedings. Slowness of court actions, often leading to the limitation of claims, adds to such reasoning.

It is estimated that efforts of environmental inspectors, in extensive inspection of companies' operation, undertaking preventive measures and joint actions with other inspection services, such as for instance fire-prevention actions in waste disposal sites in coastal areas, and regular notification on ecological accidents, have significantly improved in the recent period. Establishment of an integrated national environmental inspection would add to efficiency and powers of inspectors. Environmental inspectors are authorized to control application of quality standards for environmental elements, application of technical environmental standards, implementation of environmental monitoring, measuring emissions and immissions and record-keeping, implementation of environmental measures set in regulations, programs, plans and procedures, and supervise the operation of legal persons engaged in professional environmental activities and waste management, as well as control of using enforcement instruments.

#### *Key problems of the environmental inspection:*

- not synchronized action of inspection services with other ministries (for health, waters, fishery, maritime affairs),
- there is no sufficient number of environmental protection inspectors, particularly in large industrial centers such as Zagreb, Split, Rijeka, Osijek, etc.
- lack of modern technical equipment to enable fast action and provide computer support to inspectors

#### *Prioritization of problems*

National legislation in the field on environmental inspection tasks is based on the three basic criteria: impact on ecosystems, impact on economy, and impact on health.

#### *Policy and measures*

Inspection is a very important part of governmental duties, and should therefore consist of regular, continuous control in the entire State territory, which requires sufficient number of qualified inspectors and adequate level of technical equipment. Apart from the measures set by the Law on the System of Governmental Authorities, valid for all inspection services, and environmental legislation, authorities of inspectors should be more clearly defined within the administrative area they cover, in order to strengthen the efficiency of control.

### *Legal, regulatory and institutional framework*

Law on Amendments to the Structure and Competence of Ministries and State Administration Authorities ('Narodne novine' 48/99) and the above Law on Environmental Protection, Law on Air Quality Protection and Law on Waste, provide framework for inspection actions.

To improve efficiency of inspection control, the following recommendations were developed:

- increase penalty levels for violations, and anticipate the possibility of additionally prescribing protective measures for some of them (acquisition of objects used in violating actions, dispossession of the working permit, deprivation of economic profits), unless that has already been prescribed for the activity in question;
- authorize inspectors for collecting a fine for some activities on the spot (exemplary fine);
- certain violations of the law should be designated as industrial crime if the violation in question has such characteristics, and appoint an appropriate fine;
- in order to eliminate immediate human health and life risks or major hazards, authorize inspectors to issue a verbal order on elimination of danger, setting at the same time the deadline for a written decision on the matter and propose penalties for non-compliance with inspector's verbal orders;
- authorize inspectors for temporary acquisition of objects used in violating or criminal actions, unless that has already been prescribed for the activity in question;
- preventive actions regulated in new legislation which has a considerably different approach to the subject, should include accreditation of inspectors for providing professional assistance in enforcement of regulations and warning about the possible consequences of non-compliance with them, as well as to other circumstances influencing compliance of operation with the legal prescriptions;
- authorize inspectors to perform control over implementation of international environmental agreements a party of which is the Republic of Croatia. If an international agreement is immediately applicable, i.e. if its provisions do not require enactment of related laws, it is possible to include in the law on ratification of such an agreement, as necessary, certain measures and actions enforceable by an inspector in the implementation of that international document;
- should a legal or natural person fail to undertake measures prescribed by an inspector, the inspector should have the authority to entrust the execution of the measure in question to another legal or natural person at the cost of that legal or natural person which has failed to follow inspector's orders;
- in case of non-compliance with the inspector's decision, legal or natural person should be forced to execution by means of administrative measures – appointing high pecuniary fines, unless this has already been prescribed for the particular case;
- include a provision that an inspector must act upon reports lodged by legal and natural persons, whenever the report concerns control actions within his/her competence, and afterwards inform the submitter of the report on the actions taken and the measures prescribed;
- non-execution of an inspector's decision should be defined as violation;
- division of competence should be examined, and insist on clear and transparent legal definition of environmental inspection duties as opposed to other inspection services (forestry, water management inspection, etc.), to avoid conflicts of jurisdiction;

- prescribe the status of urgency for procedures requiring inspectors' actions upon reports and requests.

## WATER MANAGEMENT INSPECTION

Inspection over the provisions of this Water Act and subsidiary regulations is carried out by the State Water Directorate (hereafter: State Water Management Inspection) and the County offices in charge in water management (hereafter: County Water Management Inspection). Water management inspection may also be performed by other government officials authorized by the Director of the State Water Directorate.

Water management inspection supervises in particular:

- the conditions of the watercourses,
- technical condition and proper use of water works and plants,
- the use of water and water estate in accordance with this Act, water management legal acts and concession agreements,
- the status of water pollution and contamination and implementation of water protection measures, the compliance with the conditions determined by the water management legal acts,
- preparing and implementation of flood protection measures and other measures for protection from adverse effects of water.

The State Water Management Inspection supervise the application of the provisions hereof and other regulations, and implementation of measures in water management referring to interstate commitments, works and the conditions of water system on interstate and national waters and the coastal sea, preparing and implementing, between others, the National Water Protection Plan, compliance with water management legal acts.

The State Water Management inspection may directly carry out operations from the scope of the County concerned, if this is considered the only way to implement the provisions of this Act and other regulations based hereupon, when the authorized water management inspection has failed to carry out the supervision in time, or has not completed the procedure by the specified time-limit.

Table 2. Data related on the work of the water management inspection

YEAR	RESPONSIBLE INSPECTION	NO.OF INSPECTORS	CONTROL	LEGAL ACTS	DENOUNCES
1996.	STATE	11	1,259	673	174
	COUNTY	34	3,024	780	165
1997.	STATE	11	1,324	560	273
	COUNTY	31	2,814	714	191
1998.	STATE	12	1,097	535	102
	COUNTY	28	3,089	710	120
1999.	STATE	11	1,438	733	92
	COUNTY	31	3,207	704	131
<b>STATE AND COUNTY INSPECTION</b>					
1996-99	TOTAL		17,252	5,409	1,248
	AVERAGE	42	411	129	30

Source: State Water Directorate

## **VI. COMPLIANCE PROMOTION**

It has to be stated that compliance promotion i.e. encouragement of voluntary compliance with environmental requirement is not developed on the systematic way. It is rather private initiative of the government officials or inspectors, so rather exceptions than rule.

## **VII. ENFORCEMENT**

Carrying out the inspections, the water management inspector shall have the right to ask the authorized person in the legal entity, or the physical person, where the inspection is carried out:

- to allow inspection in the working premises,
- to submit the all required data and documents,
- to report the measures taken to eliminate the defects,
- to organize and allow water sampling for analysis,
- to allow the direct insight into the working process.

The costs of water sample analysis are converted from Governmental Budget, or from the budget of the County, if the content of water do not correspond to the contents to the contents specified by the water management permit, the cost shall be covered by the legal entity or physical person in question.

If the water management inspector finds any infringement of the provisions of the water Act or of the regulations based on this Act, he shall state in writing all irregularities and defects and order the measures and time of their correction, and hold on denounce.

In that case the water management inspector shall have the authority:

- to forbid construction or other works if they are carried out without the required water management legal acts or contrary to the provisions therein,
- order temporary suspension of works and activities,
- forbid the use of facilities of plants,
- forbid or limit the water use,
- forbid or limit discharge of hazardous substances into water,
- forbid disposal of waste and other substances in areas where this may cause degradation of water quality,
- order measures for treatment of polluted water,
- order repair of damages and establishing of the original conditions,
- order temporary confiscation of objects used in violation of the provisions of Water Act, until final verdict,
- take other measures and actions in accordance with this Act or regulations based on this Act.



The water management inspector may bring the verbal decision and immediately order its implementation if it is necessary to stop the action which may cause direct danger to human lives and health, fauna and flora, or result in major material damage, and in the particular:

- in case of direct danger of flood, outflow or deterioration of a flood situation,
- in case of the risk of water shortage or problems in water supply,
- if there exist a water pollution hazard, or if the pollution has already taken place in the extent which presents real danger to human lives and health or to flora and fauna.

The decision in writing shall be sent to the party within seven days from the date of the verbal decision.

A complaint against the decision by the State Water Management Inspection may be submitted to the State Water Directorate within eight days from the receipt of the decision.

The complaint shall be considered by special commission, of the State Water Directorate, appointed by the Director of the Directorate.

The complaint against the decision shall not delay implementation.

Should the legal entity or physical person fail to follow the directive given in the decision of the water management inspector, such entity or person shall be sanctioned by a penalty equivalent to ten-fold amount of average salary in the Republic of Croatia in the past quarter. Each further penalty shall be equal to the double amount of the provisions.

The penalty shall be charged by administrative bodies in charge of monetary penalties. The amount of the penalty shall be paid in favor of the budget of the town or municipality where the seat of the legal entity is situated, or where the person in question is carrying out the activity.

### *Penalties*

Within the provisions of the Water Act are specified the penalties in the different amount which shall be administered to the legal entity or person. Here will be presented only amount of penalties related to the water pollution control.

The penalty in the amount from 40,000 to 500,000 Croatsians Kuna (5,000 to 62,500 EURO) shall be administered to the legal entity or person:

- which discharges into water hazardous or other substances or deposits them in the areas where there is a risk of water pollution or contamination, contrary to the provisions of the Water Act and regulations based on the Water Act,
- which does not carry out treatment of technological waste water,
- which does not remove hazardous substances,
- which discharge waters from the local disposal system above allowed limit values,
- which fails to eliminate the defects on waste water in accordance with the decision on waste water disposal,

- which does not discharge waste water in accordance with the decision on waste water disposal,
- which does not implement the measures determined by the Water Protection Plan,
- which fails to respect the prohibition or limitation of waste water discharge, or other prescribed measures during low discharges,
- which fails to notify the police about water pollution or contamination, or on the risk thereof in connection with the activity or error of such entity or person,
- which performs water quality analysis without license,
- which performs, without water management approval, construction and other works for which such approval is required, or carries out such works in discord with the approval.

The penalty in the amount from 20,000 to 100,000 Croatsians Kuᅇa (2,500 to 12,500 EURO), shall be paid by the legal entity or physical person:

- which does not keep regular evidence on discharging of hazardous and harmful substances into water.

The penalty in the amount from 2,000 to 10,000 Croatsians Kuna (250 to 1,250 EURO) shall be paid by the legal entity or physical person:

- which does not submit the data from the evidence on discharging of hazardous and harmful substances.

If the water management inspector finds any infringement of the provisions of the water Act or of the regulations based on this Act he shall to hold on the denounce against the legal entity or physical person fail to follow the water management permit or permit ordinance or in the case of the accidental pollution.

Also in the case of the accidental pollution the denounce in according to the Criminal law become rather rule than exemption.

Because of the very slow work of the Courts the Water Management Inspection rather use the administrative measures in accordance with the Water Act than wait for the judgement of the Court.

Table 3. Data related to the judgement of the Court (1.1.1999. to 1.9.2000.)

INSPECTION	NO.OF DESIGNION.	REASONS THAT PROCES WAS STOPPED		PUNISHMENT	
		BECOME OBSOLETE	OTHERS	REPRIMAND	FINE
STATE	74	43	7	5	9
COUNTY	18	2	1	2	13
TOTAL	92	45	8	7	32
%	100	58		42	

Source: State Water Directorate

## **VIII. ASSESSMENT AND FEEDBACK**

The water management inspector shall advise the State Water Directorate to cancel a water management permit to temporary or permanent withdrawal.

As the State Water Management Inspection is the part of the State Water Directorate (department within the Directorate) which is responsible for the enacting of the relevant regulation related to the water management, water pollution, environmental protection the inspection, policy makers and permitting service is within same institution. The State Water Management inspection actively participate in the process of preparing of the legislation, and assessment of the effectiveness of legislation and effectiveness and enforceability of environmental conditions, and give its feed back.

Also how water management inspection may also be performed by other governmental officials authorized by the Director of the State Water Directorate, it can be said that also other governmental officials responsible for policy and permitting process are involved in inspections and they can give its feed back to the water management inspection.

**CYPRUS**

**ENVIRONMENTAL LEGISLATION IN CYPRUS**  
**-ENFORCEMENT AND COMPLIANCE-**

**January, 2001**  
**Nicosia, Cyprus**

## INTRODUCTION

Cyprus has an intense Mediterranean climate with the typical seasonal rhythm strongly marked in respect of temperature, rainfall and weather generally. Hot, dry summers from mid-May to mid-September and rainy rather changeable winter from mid-November to mid-March are separated by short Autumn and Spring seasons of rapid change in weather conditions. The average annual total rainfall is about 500 millimeters. Statistical analysis of rainfall in Cyprus reveals a decreasing trend of rainfall.

The rapid economic development over the last three decades, accompanied by rising standards of living and considerable changes in lifestyle, have led to a variety of environmental pressure problems and strains on the country's natural fabric.

A high rate of urbanization, which rose from about 44% in 1974 to 68% in 1992, has mostly concentrated along the main southern coastal cities having grown by an average of 2.7% annually. This increase, combined with the fact that 93% of tourist bed capacity is located along the coast, has led to heavy pressure on the coastal areas, exacerbated by infrastructure development and to a lesser extent, agricultural and industrial development. Conflicting and competing demands for coastal space and pressure on land resources in the areas adjoining the coast, are manifested by shrinking of agricultural land in favor of residential land, fragmented settlements and isolated buildings in the countryside, unconsolidated growth and rising land value.

In Agriculture, soil erosion, use of weed killers and agrochemicals, animal waste, water use and the losses of prime agricultural land to other uses are some of the most important problems.

Industrial activities in the coastal area of Cyprus are restricted to energy production (i.e. electrical power stations), cement production plants, oil refining and spirits production and very recently seawater desalination. The main concern for industry is the small size of bulk of the pollution units as it impacts on the economics of pollution control equipment and measures.

The response to the problems has been substantial and there is still time to avoid serious extensive and irreversible impacts on the environment of the country. The commitment to streamline Environmental legislation and policy with those of the EU's has provided the path and further impetus to speed up the process already initiated to address the problems.

## **1. POLICY PLANNING**

The Council of Ministers has the overall responsibility for the formation of environmental policy.

Environmental policy is applied by the Council of Ministers through the Minister of Agriculture, Natural Resources and Environment, who is the Minister responsible to administer overall control and co-ordination over the protection and preservation of the environment excluding town and country planning issues for which responsibility rests with the Minister of Interior and the Planning Council.

The Council for the Protection of the Environment is an advisory body, chaired by the Minister of Agriculture Natural Resources and Environment. Its representatives from governmental and quasi-governmental agencies with responsibilities on specific environmental issues, as well as from eight non-governmental environmental and other related organizations. The council advises the Minister on policies and issues related to environmental protection and conservation and acts as a link between Government and the environmental organizations.

The Environment Committee, is chaired by the permanent Secretary of the Ministry of Agriculture, Natural Resources and Environment and its members are the Permanent Secretaries or their representatives of the Ministry of Interior, Commerce, Industry and Tourism, Labour and Social insurance, Health, Communication and Works and Education, the Planning Bureau, the Director General of Cyprus Tourism Organization and the Director of the Department of Town Planning and Housing.

The Committee reviews environmental issues, provides advice on the formulation and determination of environmental policy objectives, further refines environmental policies, acts as an overall co-coordinators among Ministries and resolves conflicts.

The Environmental Service, under the Ministry of Agriculture and Natural Resources, is the co-ordinating Service of the Government programmes for the Protection of the environment, heads the technical committee on environmental impact assessments, advises on environmental policy, is mandated to ensure the implementation of the environmental policy and provides secretariat services to Environment Council and the Environment Committee, also being the administrative arm of the latter.



## **2. OBJECTIVES**

The incorporation of sustainability into economic development policies in the new National Development Plan for 1999-2003 resulted so that in Cyprus now development objectives are pursued in conjunction with the preservation of the environment and the development effect is gradually readjusted, so as to integrate environmental considerations into all other main stream economic sectors.

The main objectives of the environment policy are:

- Strengthening the existing institutional structure for environmental planning, implementation and enforcement.
- Creation of environmental awareness and more active participation of local authorities and of the people in the formation and implementation of environmental policy.
- Modernisation and codification of environmental legislation and, its streamlining with European standards with the parallel exploration of potentials for the utilisation of environmental fiscal instruments.
- Rational land-use planning.
- Integrated pollution and wastes management control, with parallel restricting of Cyprus industry and its assistance to comply with new environmental regulations.
- Management and conservation of natural resources, nature and wildlife.
- Promotion of co-operation with Organization and other governments on regional and international environmental issues.

The new national Programme for the adoption of the European Union *acquis communautaire* in respect to the environment has been prepared and is being implemented.

The programme's undertaking to transpose Community environmental legislation is considerable. While to date no environmental directive is fully transposed (apart from the directive on free access to environmental information) the transposition process is well advanced and in several areas close to full alignment with the *acquis*.

Full transposition of the environmental *acquis* will be effected through revisions to existing Laws, the new Laws for the environment and the drafting a number of new Laws.

### 3. LEGISLATION

Environmental legislation originates from Departments or Ministries, undergoes legislative drafting by the Attorney General's Office, is approved by the Council of Ministers and submitted to Parliament for consideration and approval, as submitted, or amendment, or rejection. The Parliament can also originate legislation. The Council of Ministers or Ministers are also vested, by legislation, with authority, either to grant permits and licenses or issue orders or Regulations, the latter being deposited to Parliament, which has the right to approve, reject, or amend them.

Comprehensive environmental legislation is an integral part of environmental management. Cyprus environmental legislation is wide ranging. It covers the entire expanse of environmental issues, uses all forms of legislative instruments (Laws, regulation, administrative orders) and is linked to a comprehensive international legislative system, which includes numerous international conventions.

During the last 2-3 years two decisive steps were taken concerning environmental legislation in Cyprus.

The first one is the drafting of a number of new environmental Laws:

- The Law on the Free Access of the Public to Information Related to Environmental Issues, No.125(L)2000.
- The proposed Laws on the Environmental Impact Assessment and on the protection and management of Nature have been approved by the Council of Ministers and are in front of the House of Representatives for approval.

The other step is that the process of the transposition of the national legislation to align with European Community acquis is at the final stage.

A brief description of the Laws in respect of the different areas needing protection are as follows:

## **a. Water Protection (Quality)**

i) The Control of Water Pollution Law (No. 69/91). The Law for the protection of waters includes provisions for the setting of quality standards for the waters of Cyprus and the determination of activities that should only be carried out under license. Also, for industrial sources a permit is required for the discharge of effluents which may be granted under terms and conditions regarding effluent standards, quantity and manner of disposal, and of technical, operation and monitoring specifications and conditions.

Other significant principles of this Law are: the right of persons to submit recommendations on discharge licensing applications, the right to appeal, the right for compensation in cases of revoking permits; the charging of applicants to cover costs of processing application and costs of monitoring compliance and the appointment of Chief Inspectors and Inspectors to safeguard enforcement.

Competent national authorities for this Law are the Ministries of Agriculture Natural Resources and Environment and the Ministry Labour.

Very recently, the Minister of Agriculture using article 3 of the Law, issued an Order for surface waters intended for the production of drinking water.

## ii) The Fisheries Regulations (No. 273/90)

Under the Fisheries Regulations, Standards have been adopted for substances in effluents and the environment quality for recipient water referring to BOD5, COD, DH, TSS, Copper, Cadmium and Mercury. There is also prohibition of the disposal of lubricating and other oils and in the use of organotin-based antifouling paints in the marine environment as well as of any other substances or objects that may have a direct or indirect impact on the marine environment.

iii) Fisheries Law Cap.135-Amendment of 1990 according to article 6. Para. 31. "Any person violating any regulations relevant to pollution is guilty and subject to a fine of up to US\$60,000.

iv) The ratification Law No. 57/79

This Law ratifies the Convention for the Protection of the Mediterranean Sea against Pollution as well as the relevant Dumping and the Emergency Protocols.

v. The ratification Law No. 266/87

The Law ratifies the LBS and SPA Protocols.

vi. The ratification Law No. 57/89.

This Law ratifies the Convention for the Prevention of Marine Pollution from Ships, MARPOL 73/78 with the amendments of 1984 and 1985.

**b. Legislation for the protection of waters from industrial wastes, from industrial wastewater and solid waste disposal.**

i) Water Pollution Control Law, 69/91

Waste disposal from industries is fully controlled through the relevant provisions of the Water Pollution Control Law. Industrial effluent standards are set, this directly encouraging the minimization of the generation of wastes and waste water reuse, recycling and treatment.

ii) Considerable legislation exists in Cyprus on the collection and disposal of urban waste.

- The municipal Corporation Law. Cap. 240
- Village (Administration and Improvement) Law, Cap. 243
- Public Health. Village Law Cap. 259
- The Public Roads and Public Areas Pollution Prevention Law. No. 19(1)/92 prohibits the illegal deposit on rubbish on other useless objects and substances in public roads and public areas.
- The Foreshore Protection Law (Cap. 59) and the subsequent amendments the latest being No. 75(7)/94

**c. Domestic wastewater disposal**

- Domestic wastewater disposal is controlled by the Water Pollution Law No. 69/91 and the associated Regulation and Decrees 52/93, 297/95.

- Provisions in Regulations approved under the Sewerage and Drainage Law, impose conditions concerning the nature and character of waste discharged into a public sewer as well as effluent standards for industrial wastes to be allowed into them.

#### **4. PERMITTING**

Permit systems exist for almost all activities in Cyprus, covered by the relevant Laws according to the nature of the activity.

##### **A. ACTIVITIES**

###### **a. Industrial activities**

All industrial installations are subject to a Planning permit according to the Town and Country Planning Law No. 90/72 as subsequently amended, the latest being Law No. 72(1)/98.

A Building permit is necessary according to the streets and Building Law cap. 96/59 as amended in 1998.

According to the Atmospheric Pollution Control Law 70/91 and the Water Pollution Control Law 69/91 industrial activities require a permit for operation and have to obtain a license.

In addition to the above permits the grant of effluent discharge permits according to the water Pollution Control Law is a prerequisite for the grant of the building permit. This permit includes terms and conditions in respect of the quality and the quantity of treated effluent and the way of their discharge.

###### **b. Solid waste disposal**

An operation permit is necessary for any solid waste disposal from any industrial installation, while the Municipal Corporation Law Cap.240 controls solid wastes disposal for cities and the villages (Administration and Improvement) Law cap.243 and Public Health Villages Law cap.259 for villages and other country settlements.

###### **c. Incineration of wastes**

A building permit according to the Streets and Building Law Cap.96/59 as amended in 1999 and a permit for operation according to Atmospheric Pollution Control Law, 70/91, are necessary for all installations undertaking incineration of wastes.

d. Urban Development

A Planning Permit and Building Permit are necessary for any urban development.

**B. PERMITTING AUTHORITIES**

- a. Minister of Finance-Approval of the National Development Plan for the whole island.
- b. Department of Town Planning and Housing-Planning and Building permits for cities.
- c. Department of Town Planning and Housing and the District Officer through the Local Improvement Boards-Planning and Building permit in areas other than cities.
- d. Minister of Agriculture and Natural Resource and Environment – Permits for discharges.
- e. Minister of Labour and Social Insurance-Permit for Operation (industrial activities).
- f. Environment Committee (chaired by the Permanent Secretary of MANRE) Approval of EIAs.

## 5. COMPLIANCE CONTROL

Compliance with existing Laws is promoted with the use of existing provisions by the agencies which have enforcement responsibilities over a wide range of environmentally-related issues, in the subject-matter areas of their responsibility.

Under the Water Pollution Control Law and Atmospheric Pollution control Law there are provisions related to the two key tools for compliance i.e. the keeping of a Register and Inspection.

### a) Registration

Article 19 of the Water pollution Control Law provides that the Minister keeps a Register with all the details referred to:

- a. Applications submitted for discharge permits.
- b. Permits granted with details of terms and conditions.
- c. Quality objectives which are defined for the different categories of recipients.
- d. The results of sampling and analysis of the quality of water, when these exceed the quality objectives which have been defined.
- e. Measures taken for restoration of quality of water.
- f. Dates for which the quality objectives for the water have been achieved.

### b) Inspection system

Inspection of permits is carried out by environmental pollution Inspectors and Safety Inspectors of the Department of Labour and Inspection and Environmental Pollution Inspectors of various agencies of the Ministry of Agriculture, Natural Resources and Environment as per their respective responsibilities.

Inspectors are well-qualified and regularly trained in order to keep pace with current developments in the above fields.

Assigned responsibilities and entrusted powers to inspectors are so that to facilitate effective compliance control.

Among others, inspectors have the power to:



- Enter any installations for which there is good reason to believe that operation or activity is carried out which might lead to violation of any term of the permit.
- To inspect, examine and check the operation of any installation on equipment of the installation and to carry out any out any measurement.
- To request for examination of any books on documents which he believes that contained information relevant to the purpose of his inspection.

In addition to the above, prior to starting the operation of any installation, the terms and conditions of the Building and Planning license are checked by the Town Planning and Housing and District Inspectors of the District Office according to the Town and Planning Law.

Monitoring Programmes are also carried out for the assessment of the quality of different part-areas i.e. surface ground waters etc.

Parameters which are monitored are BOD<sub>5</sub>, COD<sub>4</sub>, pH, metals and nutrients in surface waters and metals and organic pollutants in biota.

## 6. COMPLIANCE PROMOTION

Compliance promotion with legislation is a weak link in the environmental management chain and more efforts are required to achieve voluntary compliance with environmental legislation in Cyprus.

A number of action and measures should be taken in order to promote voluntary compliance which among other should include the following:

- Competent authorities should formulate environmental standards such as emission and ambient standards through a process in which relevant bodies affected by the proposed regulations, will participate.
- Prevention at source with the employment of best available technology but not entailing excessive cost.
- Transparency and open deliberations during the entire procedure of drafting new regulations.

The very recent Law No. 125(I)2000 on the Free Access of the Public to Information related to Environmental Issues, is a decisive step towards the promotion of compliance.

Article 2 of this Law provides that national competent authorities are obliged to provide any information they have to any person requesting, so, without justifying any personal interests.

Exceptions to the above are information considered confidential or related to national safety.

According to article 9(2) the Minister prepares a biennial two-year report of general information which is distributed to the public, containing information on state of Environment in the Republic.

Provisions like the above undoubtedly contribute to compliance, as the violator of the legislation will be open to criticism by the public.

## 7. ENFORCEMENT

Implementation and enforcement of Legislation in Cyprus are carried out in accordance with existing Laws and regulations by the Agencies which have enforcement responsibilities over a wide range of environmentally-related issues, in the subject-matter areas of their respective responsibility.

Enforcement of Law is usually left to Government authorities responsible for the protection of the environment. Nevertheless, private prosecution by individuals or even environmental groups, is, also a possibility and it can be exercised with the consent of the Attorney General.

Enforcement of legislation regarding the control of industrial effluents and emissions, under the Water Pollution Control and the Atmospheric Pollution Control Laws, is carried out through a system of inspection of premises and installations. The duties and powers of inspectors and other administrative arrangements such as criminal procedures, penalties etc., are provided for in the aforesaid Laws. A Court injunction may also be requested and granted for the discontinuation of operations, when a charge is made for violations of the Law, by and on behalf of the Government or of the interested local authority.

Criminal Law is used either through criminal sanctions for environmental harm, i.e. where the offense consists of a direct act of pollution, or as a substitute and complementary to the regulatory system, i.e. where the offense is not directly linked to the environmental harm but to non-compliance with an administrative process. Criminal Law is used to punish environmental harm either as a public wrong where the purpose is primarily the protection of the health of the people (i.e. the Criminal Code with regard to atmospheric pollution), or as a moral wrong, where the protection of the environment is an end in itself (i.e. Fisheries Regulations with regard to the pollution of the sea from fishing vessels).

Over the last years, as environmental consciousness increases, the penalties for relevant criminal offenses become more strict. Furthermore, sometimes the penalties provided for an offense may be accompanied with an order for the

clean up of the environmental harm created (i.e. the Water Pollution Control Law).

The Criminal Code (Cap. 154), makes it a misdemeanor to voluntarily pollute the atmosphere or the waters so as to make it harmful to people or unsuitable for normal use, respectively, noise pollution and unhealthy smells being a criminal nuisance.

There are no particular mechanisms in place for the monitoring and updating of environmental legislation and changes are proposed as they arise. However, relevant proposals are made in the new and draft Laws for the Protection of the Environment.

Enforcement of measures and legislation is a weak link in the environmental management chain and more efforts are required in order to enforce licensing requirements and streamline enforcement processes.

Enforcement issues applicable to all environment related legislation have been elaborated and expanded in relevant provisions of the new and draft Laws for the Protection of the Environment. They cover offenses, penalties, assessment of penalties, costs responsibility of third parties, proof of intention and violation, additional penalties, injunctions, compounding powers, notification of prohibition, costs of enforcement, out-of-court settlements, on-the-spot fines, withdrawal and cancellation of licenses, etc.

**EGYPT**

**Informal Network on Compliance and  
Enforcement in the Mediterranean**

**Inspectorate System  
Egypt Country Report**

**March 2001**

**Yasser Sherif  
Principal, Environics  
Egypt**

## **1. Introduction**

Environmental legislation in Egypt has accumulated during the last few decades. Currently, the oldest legislation in force regulating the environmental performance of establishments dates back from 1954. Although, the word “environment” did not appear in this legislation, it is actually the reference law for the strongest, and most direct, law enforcement powers, including closure and revoking of licenses, which are given to local administration through this law. Other milestone legislations include; inter-alia:

- Law 93/62, which competent authority is mainly municipalities or sanitary drainage authorities concerning the discharge of effluents to the sewage network;
- Law 48/82, which competent authority is the Ministry of Irrigation concerning, among others, the discharge of effluents on surface water and ground water;
- Law 137/83, which competent authority is the Ministry of Manpower concerning the work environment; and
- Law 4/94, known as the environmental law which has set the framework for environmental management in Egypt. This law is overseen by the Environmental Affairs Agency, but involves many competent authorities according to specific issues.

Law 4/94 does not supersede most of the preceding laws, but rather complements them to fill existing gaps. It regulates, inter-alia, air emissions, hazardous waste and requires the preparation of an Environmental Impact Assessment (EIA) for projects for which environmental impacts are probable. It also requires establishments to keep a record of their environmental discharges to the environment. This “environmental register” is subject to inspection and field checking.

This accumulation of legislation throughout the years is reflected on the current organization of inspection functions on the national level. Inspection and enforcement of different laws fall within the responsibilities of various organizations, as stated above, each having its inspection / enforcement capabilities. However, law 4/94 re-organized the Egyptian Environmental Affairs Agency (EEAA), originally established in 1982, to grant it planning and coordination mandates which are currently utilized to incrementally streamline inspectorate functions.

## **2. Current Status of Basic Inspectorate Functions**

### **2.1 Legislation**

Legislation in each field of specialization is drafted by the specific competent authority. For example, pesticides are addressed by the Ministry of Agriculture and boilers are addressed by the Ministry of Industry.

Depending on the regulation level, it is directly issued by the competent authority, e.g. a ministerial decree, or sent by the competent authority to the Parliament for discussion and ratification. Consistency between different pieces of legislation therefore becomes a legal issue studied by the "Conseil d'Etat", the highest legal council in Egypt, notwithstanding the knowledge of other laws that the competent authorities might have. However, a positive development has taken place in the last few years. Based on law 4/94, EEAA is concerned with:

- "Consideration of proposed legislation related to the protection of the environment";
- "Set the necessary norms to be followed when planning and developing new areas as well as targeted norms for old areas";
- "Establishment of norms and conditions to be complied with by projects and establishments"; and
- "Carrying out of field follow-up of compliance to norms ... and...undertake the procedures stated in the law against violators".

Accordingly, committees established by the competent authorities to develop and / or modify regulations started to include an official representation of EEAA. Moreover, although not becoming yet the norm, draft legislations are more often sent to EEAA for review and comment.

## 2.2 Permitting

Permitting is used in Egypt concerning specifically the discharge of effluents according to laws 93/62 and 48/82. Otherwise, environmental permitting is not formally applied in Egypt.

However, the EIA review system in EEAA produces specific requirements for the projects in question concerning conditions for construction, operation and management. In terms of contents, it is similar to an environmental permit, but is not used as such by the inspection system. The necessary linkages between the EIA and the inspection systems are missing. Therefore, inspection when conducted on a facility that submitted an EIA and received an approval conditioned by specific requirements partly reflecting mitigation measures, and monitoring plans already proposed by its developers is usually based on the applicable laws only and not on the specific requirements. Occasionally, inspectors are provided with the EIA studies of specific facilities together with the conditional approval of EEAA based on which the facility's license was issued. However, the information transferred, composed of an often bulky report on one hand, and an approval letter on the other, makes the "inspectability" of the specific requirements difficult.

Making the necessary connection between the EIA and the inspection systems, has been suggested in a recent report<sup>1</sup> to EEAA, to emulate the environmental

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<sup>1</sup> Environics, "Performance Appraisal of EEAA Review System in Egypt", February 2001



permitting system while avoiding a long process of introduction of environmental permits in the applicable legislation.

## 2.3 Compliance Control

Each competent authority has the responsibility of inspection for the evaluation of compliance to applicable legislations and specific environmental requirements. This obviously multiplies environmental inspections and puts an unnecessary burden on the inspected facilities. Redundancies and inefficiencies are magnified by weak information exchange.

In order to partially overcome these problems, several governors have formed inspection teams composed of all concerned entities to undertake the inspection of larger facilities.

Of all the entities, the ministry of manpower (MOM) has the most extensive network of highly qualified inspectors. MOM inspectors conduct inspection according to law 137/1983, law 453/1954 and licenses laws. Because of their extensive network of qualified inspectors, the MOM inspectors are also assigned, through formal agreements with other authorities, sometimes to conduct inspections according to other laws such as:

- law 93/1962 concerning wastewater discharge to public sewer system;
- law 27/1981 concerning quarries;
- law 55/11977 concerning thermal equipment and boilers;
- law 3/1983 concerning urban planning;
- law 79/1975 concerning social insurance;
- law 78/1974 concerning elevators; and
- law 59/1960 concerning protection from radiation.

The major overlap between different inspection bodies is a result of the responsibility given to EEAA of inspecting the “environmental register” and field checking its conformance to reality. Since the register addresses all environmental discharges, regardless of the medium and conditions, EEAA is the only inspection body in Egypt which performs multi-media inspections, thus overlapping with other inspection bodies implementing their medium-specific or issue-specific laws.

Inspection activities for compliance control are conducted by all inspection bodies based on public complaints. Moreover, the majority also conduct periodic inspections required by the different laws. However, because of the sheer numbers of facilities to be inspected, the frequency of inspections is far less than that required. The selection of facilities to be periodically inspected varies across inspections bodies, and no formal criteria exists for prioritization which seriously constrains the possibility for joint planning and complementarity between different bodies. Moreover, each inspection body uses its own information collection and reporting tools which represents a barrier to information sharing .

The recent establishment of a data base in EEAA for industrial inspection could be effectively used as a tool to encourage homogenization of information collection tools of different inspection bodies. However, this can only be done after reaching a certain critical mass of information in this data base to demonstrate to other inspection bodies the advantages of standardized formats for information storage, analysis and sharing.

## 2.4 Compliance Promotion

EEAA is the only inspection body consistently active in compliance promotion. Several approaches have been taken to promote voluntary compliance with environmental requirements.

- Awareness and Education

Several information-based activities targeting industries are undertaken by EEAA. These include awareness of ISO 14001 standards and environmental specifications for export to the European Union. These could potentially feed into compliance, but are not directly linked to compliance control and / or enforcement activities. Other more related activities include training on self-monitoring as an input to the environmental register legally required. Concerning pollution control, EEAA has experimented, successfully, with two different approaches especially with small scale industrial facilities:

- Demonstration Projects; and
- Collection and dissemination of successful interactions to achieve compliance.

- Financial Support

After the issuance of Law 4 of 1994, EEAA succeeded in attracting international financing for the promotion of environmental industrial projects. This financing, through the British Overseas Development Organization (ODA), the World Bank for Reconstruction and Development, the International Development Association, and the *Kreditanstalt für Wiederaufbau* (KfW), is being managed by EEAA. Apart from the project financed by the British Overseas Development Organization, which deals with low cost pollution prevention measures, the other projects target large-scale enterprises (major polluters) with relatively large investments. The main responsibility for the promotion of such soft financing options was and is still being done by EEAA in coordination with local banks participating in these projects. In addition to these financing packages available to large establishments, another facility was created within the Agency for assisting Small and Medium size enterprises in complying with environmental legislation. The Egyptian Environmental Investment Fund (EEIF) was therefore established with assistance from the Canadian International Development Association (CIDA). EEIF offers technical support as well as financial support (soft

financing) for environmental investment projects. These different soft-financing packages make about \$100 million available to industry and have helped a number of industries in their progress towards compliance.

EEAA has also started to use local funds to support industries in achieving compliance through its newly founded Environmental Protection Fund (EPF). The EPF is the operational tool of EEAA putting into effect the system of financial incentives that it has to establish according to Law 4/94. In the future, more reliance on local funds will be necessary. However, since the EPF is still in its pilot year of operation, it is irrelevant to discuss its contribution to compliance promotion.

- Compliance Action Plans

Originally, Compliance Action Plans (CAPs) were used as supporting documents for industries' requests for the extension of the grace period of Law 4/94 which ended in February 1998. Because of a Prime Ministerial decision not to grant any extensions<sup>2</sup>, the CAPs became EEAA's tool for negotiation and monitoring of progress towards compliance. Although the current negotiated agreements of EEAA with industries are named differently, they keep the spirit of monitoring compliance with agreed schedule and not to requirements unless the industry defects on the schedule.

## 2.5 Enforcement

Enforcement measures vary from notification and fines to closure according to the severity of the violations and / or its recurrence. Imprisonment of responsible individuals is also possible in specific cases. Law 4/94 has also introduced the possibility of demanding, through the court system, compensation to remedy the damages resulting from violations.

Enforcement functions are compatible with functions of compliance control, i.e. the authority performing inspection also enforces the environmental requirements it inspects, except in two cases. The first case is that of MOM which, because of its extensive network of inspectors, is assigned the inspection of different laws not originally falling in its jurisdiction. The enforcement response to violations is based on the MOM inspections, but are undertaken by the body legally responsible for it.

The other case, that of EEAA, is legally imposed by law 4/94. While EEAA has the widest mandate concerning compliance control through the inspection and field checking of the environmental register, EEAA only takes legal enforcement actions through other competent administrative authorities, even

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<sup>2</sup> A record of the CAP's history is described in, Yasser Sherif, "Launching Enforcement Programs Through Compliance Actions Plans", V INECE Conference Proceedings, 1998.

for notification of the establishment of its violations. Moreover, no enforcement measures could be taken before 60 days after notification.

On the other hand, the local administration, which is in most cases the competent authority with which EEAA should coordinate enforcement actions, has stronger powers for law enforcement, including instant administrative closure and the revoking of license, in law 453/54. This imbalance of coverage concerning compliance control on one hand and enforcement powers on the other had opened an effective channel of coordination between the two parties. Accordingly, it has been customary to date that legal actions concerning "imminent dangers to public health" detected through EEAA compliance control activities are taken under law 453/54 rather than law 4/94 which has lengthier procedures.

The public is occasionally involved in enforcement of environmental requirements through the court system, thus putting pressure on both the regulated community and the regulators which assumes the liability of not adequately fulfilling their mandated responsibility to protect the community's health and well being. However, because of the lengthy procedures and expenses involved in this approach, only a few NGO's have attempted it, successfully in most of the cases.

A "hotline for environmental complaints" by an environmental NGO in the greater Cairo region has been recently established. Although this is not a case in which the public is directly involved in enforcement, it created an additional pressure on the regulators in the region to enforce environmental requirements. The media coverage of both cases of NGO involvement magnifies their effects, but the net effect on compliance rates is not substantial.

## **2.6 Assessment and Feedback**

The high rate of non-compliance to applicable environmental legislations makes the assessment of its effectiveness in achieving environmental objectives through the inspection system feedback irrelevant in most of the cases. Moreover, although the enforceability of a number of requirements is questionable due to the shortage of resources, especially measurement and lab analysis capacities, because of this problem, assessment based on enforceability does not take place.

On the other hand, the implementability of environmental requirements is the basis for assessment and feed back in two cases.

The requirements are sometimes too stringent, and put a very high economic burden on specific industrial sectors to achieve compliance. This feed back is usually received from industries and only studied by the regulators. This is a result of the general nature of environmental standards not taking into account the specific constraints of various sectors.

On the other hand, the standards could be found very relaxed to the extent that minor modifications in the relevant technology could lead to improvements

that go much further than the required standards. This is specifically the case of fuel burning emission standards and was revealed by a focused research.

Both types of cases are taken into account in the current revision of air emission standards of law 4/94. However, it is to be noticed that none of them was a direct output of the inspection system.

Other cases of assessment of regulatory standards are based on changing conditions putting in question the necessity of such standards. This was specifically the case with the standards of effluent discharges to the sewer system. These were revised to become less stringent since the establishment of more advanced treatment facilities in a number of urban areas allows the reception of higher pollution loads without negatively affecting the quality of the environment receiving the treated water.

## 2.7 Summary

A SWOT (strengths, weaknesses, opportunities and threats) analysis have been previously conducted<sup>3</sup> for the current status of the inspection system in Egypt. It was deemed relevant to summarize the relevant points below.

### 2.7.1. Strengths

- **Different Inspection Approaches**

There are several environmental inspection approaches practiced in Egypt. The diversity of these experiments are considered to be a point of strength for the establishment of a unified inspection system since it created a wide base of personnel in the field of environmental inspection. Moreover, it represents a rich material for learning and assimilating lessons for a future inspection system.

- **Increasing Environmental Awareness in Egypt**

The current increase in environmental awareness could have been the basis of giving environmental issues a higher priority on the government agenda.

- **Emerging Positive Role in Supporting EEAA's Mandate**

Nowadays, EEAA is viewed as an entity that carries the environmental responsibilities in Egypt, which will facilitate other entities' acceptance for EEAA's coordination role, mandated by law. Internal capabilities of EEAA and its Regional Branch Offices (RBOs), in terms of both organizational and physical facilities, constitute a solid ground upon which a well-developed inspection system can rely.

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<sup>3</sup> Environics, "Establishment of Inspection System in EEAA", November 1999

### 2.7.2. Weaknesses

- **Absence of Coordination**

There is a lack of coordination between EEAA and other inspection entities. The resulting duplication, and occasional contradictions, cause inefficiencies as well as confusion for the inspected establishments.

An organizational gap exists due to the absence of a focal unit to coordinate between the different inspection departments. A well-defined, well-structured internal organization is a necessary condition for much more effective results.

- **Vague Environmental Regulations**

Responsibilities and tasks of inspection authorities are not clearly stated in law 4/1994. This does not only hamper the implementation and enforcement of the law, but it also leaves potential cooperation without guidance. A more active role for establishing cooperation modes and patterns, as well as inspection norms should be taken by EEAA, as the body mandated by the law the coordination function.

- **Lack of Resources**

- All entities active in inspection, including EEAA, lack sufficient financial resources.
- Qualified inspection personnel on a national level are limited compared to the size of activities required for industrial inspection. In a number of inspection entities, there is a clear gap between the staff capabilities and their expected duties.
- The lack accessibility to relevant data of industrial establishments hinders the planning and prioritization of inspection.

- **Limited Coverage**

This is mainly a direct result of the shortage of resources and their inefficient mobilization without joint planning.

### 2.7.3 Opportunities

- **Institutional Credibility**

EEAA is perceived by society, both regulated entities and the regulators, to be best positioned to assume its mandate as a leading

coordinator in environmental matters. This role could be best put in practice in vital issues such as environmental inspection on industry.

- **Vague Environmental Regulations**

The vagueness of regulations, considered a weakness, could also be seen as an opportunity. The legal framework does not constrain cooperation modes, and opens a wide window for interpretation and innovation in a way that satisfies the system requirements.

#### 2.7.4. Threats

- **Loss of Credibility**

Limited coverage, and the limited coordination between different inspection bodies, is clear to the regulated community and threatens the credibility of all regulators.

- **Validity of Inspection Results**

The lack of standards and accepted procedures for inspections, applied by trained personnel, puts in question the conclusions reached by inspectors. Court cases could easily undermine the credibility of inspection and reject its conclusions.

### 3. Current Developments

From the analysis, it was clear that in order to combine efforts, exchange available resources and increase inspection efficiency, all inspection entities should be integrated in one inspection system headed by a dedicated unit in EEAA known as the Industrial Inspectorate (II). As a part of EEAA, II is mandated the coordinating function by law. Protocols and agreements with other associate entities will guarantee their commitment on a formal basis.

The proposed inspection system followed a structure based on the need for cooperation between all inspection bodies to avoid inefficiency, especially necessary given the shortage of resources as well as a categorization of industries (based on environmental impact, size and complexity of processes) to guide the distribution of responsibilities among:

- National Level (Led by Industrial Inspectorate (II))
- Regional Level (Led by Regional Branch Offices (RBOs))
- Governorate Level (Led by Environmental Management Units (EMUs))
- Local Level (Municipalities)

Level	Entities within the Level	Inspection Field	
		Normal Operation	Back Stopping Operation
National Level	Industrial inspectorate and other associates	Spot check visits for "categories one and two"	Complaint-based visits for "category one" not responded to by the Regional level  Appeals investigation for "category one"
Regional Level	RBOs and other associates	Periodic and complaint-based visits for "category one"  Inspection campaigns for "category one"	Complaint-based visits for "category two" not responded to by the Governorate level  Appeals investigation for "category two"
Governorate Level	EMUs and other associates	Periodic and complaint-based visits for "category two"  Inspection campaigns for "category two"	Complaint-based visits for "category three" not responded to by the Local level  Appeals investigation for "category three"
Local Level (Town/Markaz)	Municipalities	Periodic visits for "category three"  Complaint-based visits for "category three"  Inspection campaigns for "category three"	

\* Category one being the larger, most complex and with the highest environmental impacts

The proposed system was adopted as long-term objective. The activities undertaken to date to achieve this objective are:

- Establishment of the industrial inspectorate in EEAA, which currently has a staff of 12 young inspectors (chemists and engineers);
- Establishment of an inspection data base (specifically for industry) in EEAA;
- Official issuance of environmental inspection guidelines (for industry) after two years of experimentation and modification of the first guidelines issued in 1999;
- The current development of specific sector guidelines;
- The establishment of a number of RBO's (5 out of a planned 8 covering the whole national territory);
- Intensive training of the industrial inspectorate in EEAA and the RBO personnel on inspections.

All the above will be not be only used by EEAA inspectors, but will create the necessary ground work for more homogeneous inspection activities and a higher coordination with other inspection bodies.



However, contrary to what have been suggested, the industrial inspectorate of EEAA currently undertakes inspections of facilities of different sizes. The justification of this diversion is two folds:

- RBO's are not yet ready to undertake inspection activities; and
- Field experience is necessary for the inspectorate to assume its future policy and supervision responsibilities.

It is true that existing RBO's are starting their operation while facing a number of challenges, namely:

- Scarce human and material resources;
- Unclear modes of cooperation and operational procedures; and
- The scarcity of information.

But, a starting point for institutionalizing the proposed inspection system was defined more pragmatically in the first year work plan of one of the recently established RBO's.<sup>4</sup>

Regional Branch Offices of EEAA are established to respond to the obvious need to establish links with local circumstances and to adequately cater to their specificities. However, the organizational context in which RBO's will start assuming their responsibilities is characterized by its dynamic evolution which is reflected in a substantial level of uncertainty. Most importantly, the overlap with EMU's seems to be unavoidable. This issue was addressed through an accurate definition of the RBO scope of activities during the first year of operation rather than trying to abstractly delineate the borders of the RBO / EMU respective responsibilities.

It is obviously desirable to respect the principle approved by EEAA board that executive tasks concerning environmental action should be allocated to the local administration in the Governorates, while EEAA, and its RBO, role is the technical supervision and the coordination of executive efforts. However, the accurate definition of these domains can only be done through practice, which will reveal problems and knowledge not existing at this stage.

The Objectives of the RBO in its first year of operation concerning inspections was therefore proposed to be:

- Pilot implementation of a proposed labor division; and
- Test a unified information infrastructure for inspection.

Moreover, the field activities will be limited to:

- *Inspection of Industrial Facilities of Category One (see page 10 of this report)*

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<sup>4</sup> Environics, "East Delta RBO, First Year Work Plan", July 2000

- *Support Local Administration Through Laboratory Services Based on Short-term Joint Planning*

The laboratories services would strengthen the legal position of the local administration against offenders through providing actual measurements for facilities not directly addressed by the RBO.

- *Inspection of Government-Run Facilities*

The EMU's being a part of the governorate are in a sensitive situation when government-run facilities are the offenders (e.g. solid waste disposal sites, wastewater treatment plants, electricity generation and distribution facilities). Since the RBO is not part of the local administration involved in this offense, it has a higher flexibility to address such sites.

It is, however, still to be seen whether inspection will be effectively devolved to RBO's according to the proposed national inspection system when they become operational.

**GREECE**

**MINISTRY OF ENVIRONMENT, PHYSICAL PLANNING  
AND PUBLIC WORKS  
SPECIAL ENVIRONMENTAL SERVICE (SES)**

**MED POL PROGRAMME  
Compliance and Enforcement of regulations in the  
Mediterranean for pollution control resulting from  
land-based sources and activities**

**REPORT OF GREECE ON INSPECTORATE SYSTEM**

**ITALY, Sorrento, 15 – 17 March 2001**

**Prepared by : Epaminondas Toleris  
Angelica Psaila**

# REPORT OF GREECE ON INSPECTORATE SYSTEM

## **A. Legislation**

The legislation concerning the control of pollution of the Environment in Greece consists of a great number of laws, ministerial decisions, other legislative acts and regulations that define:

- the environmental permitting procedures,
- the competent authorities for the basic inspectorate functions (compliance control, compliance promotion, enforcement) and the corresponding competences,
- the limit values of the pollutants or the desirable quality of the receiver.

### a) Environmental permitting procedures:

The legislation concerning the environmental permitting of projects or activities procedures was analytically presented during the Workshop for Experts on Compliance and Enforcement of Legislation in the Mediterranean for Control of Pollution Resulting from Land – based Sources and Activities held in Athens from 16 to 18 March 1999.

### b) Inspectorate functions:

The 1986 Environmental Protection Law (Law 1650/86) defines the competent authorities for the evaluation of the compliance with the environmental conditions set for each project or activity. These authorities are:

- The competent authorities for the establishment or the operation permitting of projects or activities (eg. competent prefectural authorities for industrial issues).
- The authorities (“inter-prefectural” or regional level) that according to the existing legislation have the right to evaluate the compliance with the environmental conditions set during the environmental permitting procedures of a project or activity, independent to who has the competence for the establishment or operation permitting (eg. Health Services with reference to the wastewater treatment facilities).
- The Ministry of Environment, Physical Planning and Public Works (YPEHODE) that has the competence to inspect independently all over the country.
- The Bodies for the Control of the Environmental Quality (BCEQ) that have the competence to make inspections for the compliance with the environmental conditions.

Moreover, the previous law and the later Ministerial Decision 59388/3363/88 provide the framework for the infliction procedures of administrative fines.

The Law 2242/94, concerning mainly the urban development of the second residence areas, provides the establishment of the Special Corps of Environmental Protection Controllers (SCEPC). This corps is under the surveillance of the Minister of Environment, Physical Planning and Public Works and the relevant Prefect or the Secretary General of the relevant region.

The Laws 2503/97 and 2052/92 include special provisions concerning the compliance with the environmental conditions set for a project or activity.

The Law 743/77 for the "Protection of the Marine Environment" provides certain preventive and pollution combating measures and also describes the obligations for both ships and onshore installations, included the appropriate sanctions for each case.

The Law 1428/84 for the "Quarrying etc.", as was amended by the Law 2115/93, as well as the Regulation for Mining and Quarrying, provide respective stipulations for the mining and quarrying activities.

Finally, the Law 998/79 for the "Protection of the forests and the forest areas in general", the Joint Ministerial Decision 69269/5387/90 and other special Ministerial Decisions, concerning mainly the environmental permitting procedures, include legislative stipulations for the compliance with the environmental conditions imposed for a project or activity.

#### c) Quality of the Environment:

A number of special legislative acts regulate the environmental quality issues respectively to the categories of projects or activities (sources of pollution) and their impacts to the various environmental means (pollutant emissions in air, water, etc.).

### **B. Environmental Permitting**

The existing environmental permitting procedures had been analytically represented during the Workshop for Experts on Compliance and Enforcement of the Legislation in the Mediterranean for the Control of Pollution Resulting from Land - based Sources and Activities held in Athens from 16 to 18 March 1999.

As it was mentioned then, a special study funded by the EU Second Structural Fund had been assigned in order to:

- update and upgrade the environmental permitting procedures existing in Greece
- edit special and detailed guidelines for each category of project or activity
- fully implement in the national legislation the European Union Legislation about the environmental permitting procedures.

This study has just been completed. Furthermore, all the Proposals of the appropriate legislative acts that will amend the existing environmental permitting procedures have already been submitted to the Ministry of Environment, Physical Planning and Public Works and the respective negotiation procedures between the co-competent authorities have been already begun.

### **C. Compliance Control and Enforcement**

According to the existing legislative framework, the competent authorities for the compliance control and enforcement of the environmental legislation in Greece are the following:

#### **a. Central level**

- The Central Authorities that are competent for the establishment or operation permitting of a project or activity (art.6 §1 of the Law 1650/86)
- The competent Central Authorities of the Ministry of Environment, Physical Planning and Public Works (art.6 §2, Law 1650/86)
- The Ministries a) of Environment, Physical Planning and Public Works, b) of Health - Welfare, c) of Development d) of Labor (for labor environment issues) and e) of Public Order (Fire Brigade) (art.8 of Joint Ministerial Decision 18187/272/88, as it was amended by the Joint Ministerial Decision 77119/4607/93).

#### **b. Prefectural / Regional Level**

- The Special Corps of Environmental Protection Controllers (SCEPC) (art.4 of the Law 2242/94)
- The Environmental and Physical Planning Unit of the Division for the Environment and Physical Planning in the country Regions (art.8 § 6a of the Law 2503/97)
- The competent prefectural authorities for the establishment or operation permitting of a project or activity (eg. the industry unit of the prefectural authorities) (art.6 §1 of the Law 1650/86)
- The prefectural authorities that by the existing legislation are competent for the evaluation of the compliance with the environmental conditions, despite who has the competence for the establishment or operation permitting of the project or activity (art.6§1 Law 1650/86) (eg. Sanitary Division of the Perfection)
- The Bodies for the Control of the Environmental Quality (BCQE) (art.6§3 of the Law 1650/86)

- The Environment Units of the Prefectures (Ministerial Decision 84498/2579/90)
- The Regional Services of the Ministries a) of Environment, Physical Planning and Public Works, b) of Health - Welfare, c) of Development, d) Labor ( for labor environment issues) and e) Public Order (art.8 of Joint Ministerial Decision 18187/272/88, as it was amended by the Joint Ministerial Decision 77119/4607/93)
- The Prefectural Services of the Ministry of Health as well as the local police instruments
- The Mining Inspectorate (Law 1428/84 as it was amended by the Law 2115/93, Regulation for Mining and Quarrying)
- The local forest services (forest inspections)(Law 998/78)
- The local port authorities (Law 743/77)
- The local police authorities.

As it shown previously, Greek legislation provides compliance control and enforcement mechanisms, as well as the definition of the appropriate competent services.

Thus, the Frame - law 1650/86 for the Environmental Protection gives compliance control and enforcement competencies to the Ministry of Environment, Physical Planning and Public Works and the Ministry of Development at national and prefectural levels.

Moreover, the same law provides for administrative fines of up to GRD 10 million (higher in serious cases endangering human lives or health), by decision of the relevant authority, in cases of pollution or other environmental degradation. Most other ministries with environmental responsibilities also have compliance control enforcement functions under separate legislation. Prefectural environmental authorities are responsible for inspecting all the category B projects or activities (as defined in the Joint Ministerial Decision 69269/5387/90) and some of the category A.

The Law 2242/94 provides for the establishment of a Special Corps of inspectors in every prefecture but only one has actually been set up (in East Attica).

These mechanisms and services can be divided in two types:

- those whose exclusive competence is the compliance control
- those that beyond other competencies (eg. environmental permitting), are furthermore competent for the compliance control and enforcement of the environmental legislation.



It has to be mentioned that the "regulated universe" comprises almost 12,500 sites (eg. industrial installations, power plants, refineries, landfills, mines, livestock, enterprises, construction sites). Table 1. Figure 1.

The first type of mechanisms and services has not been enough activated in practice for the evaluation of compliance with the environmental conditions set for a project or activity. Thus, their contribution to this purpose cannot be considered adequate.

As to the second type of mechanisms and services, at present, inspections are mostly carried out by the same staff members who are responsible for granting permits; they act in response to complaints from members of the public and rarely by initiative. It has to be mentioned that especially the above mentioned services of the Ministry of Environment, Physical Planning and Public Works that are competent for the environmental permitting of projects and activities, though extremely busy, have restricted personnel. In consequence, the time that can be used to inspections is not enough.

A remarkable exemption to this rule is the combustion inspections to industries, special buildings, hospitals bakeries, residences and cars in Attica and in Thessaloniki. In this case, inspections are regular and numerous, organized by specific programme.

There are no statistics about the total number of inspections carried out every year or the nature of the follow-up action taken (e.g. warnings, close-downs, prosecutions). For example, the Industries Unit of the Ministry of Environment, Physical Planning and Public Works averages 15-20 inspections per month for an estimated scope of 3,500 industrial sites.

Finally, it has to be reported that non-compliance with the environmental conditions of permits can lead to varying sanctions, such as: the cutting off of power, water and telephone to a site, fines imposed at prefectural level (GRD 10-20 million) or by the Ministry of Environment, Physical Planning and Public Works at central level (up to GRD 100-150 million for large projects), closure of the installation (very few cases) and of course environmental rehabilitation.

#### **D. Compliance Promotion**

Compliance promotion is accomplished through:

- the national environmental investment programming and the use of various economic instruments, such as financial assistance for environmental investment
- through other instruments of voluntary participation, such as ISO 14001, EMAS and Eco - labelling programmes.

As in the mid -1990s Greece was confronted with the need to drastically increase the investment in environmental infrastructure, several plans and programmes were formed, promoting simultaneously the voluntary compliance with environmental requirements. Moreover, since the 1980s, a

series of regional and national development laws has provided financial assistance to industry (subsidized interest rates, enhanced amortization, subsidies of 40 – 55 % of capital cost) for the installation of pollution abatement equipment or, more recently, cleaner technology. The 1998 Economic Development Incentives Law (Law 2601/98), instigated jointly by the Ministry of Environment, Physical Planning and Public Works and the Ministry of National Economy, is intended to promote private investment for economic and regional development and includes environmental eligibility criteria. The law provides subsidies and tax credits to promote a variety of purposes, such as employment, restructuring of production sectors and protection of the environment.

Furthermore, voluntary environmental actions as the implementation of ISO 14001 and EMAS or the participation in the Eco – labelling programmes promote indirectly the voluntary compliance with environmental requirements. The Ministry of Environment, Physical Planning and Public Works has begun to encourage EMAS implementation in state – owned industry, as well as to small and medium – sized private enterprises. The General Secretariat of Industry, under the Ministry of Development launched a pilot programme for the implementation of ISO 14001 and EMAS in private companies with a total budget of GRD 900 million. By the end of 1999, 104 companies have already been approved for ISO 14001 or EMAS implementation under this initiative.

## **E. Assessment and Feedback**

There is no formal procedure for the assessment of the effectiveness of the applicable legislation or the effectiveness and enforceability of environmental conditions for feedback to policy – makers and permitting services. As, according to what was mentioned previously, at present inspections are usually carried out by the same staff members who are responsible for granting permits, this procedure is accomplished informally during inspections.

It has to be mentioned that the National Center of Environment and Sustainable Development, that recently established in Greece, has inter alia relative competences for assessment and feedback.

## **F. INSPECTORATE**

As the Ministry of Environment, Physical Planning and Public Works recognized the need for the reformation of the current inspectorate mechanism, a relative special study was assigned. This study, which started in May 1996 and was completed by October 1997, was conducted by the National Observatory of Athens (NOA), in close collaboration with the Ministry of the Environment, Physical Planning and Public Works.

This study set the basis for the establishment of a new, well organized mechanism (agency) for the Inspection and Enforcement of Environmental Legislation in Greece, named INSPECTORATE.

The scope of INSPECTORATE will be to:

- a) inspect all activities and projects in Greece, both during construction and during normal operation, and evaluate the compliance with the environmental permit conditions and with the environmental laws and regulations, and
- b) use the necessary instruments to enforce environmental legislation in case of non-compliance.

At the first phase of the study, 3 main alternative schemes were proposed to the Ministry of Environment, Physical Planning and Public Works:

1. Public Entity Private Corporation
2. Mixed Scheme
3. Private Corporation

These schemes are shown to Figures 2 - 4.

The Greek Government will proceed soon to the procedures for the establishment of the amended mechanism for the Inspection and Enforcement of Environmental Legislation.

## **G. References**

1. OECD, Environmental Performance Review, Greece, 2000.
2. Ministry of Environment, Physical Planning and Public Works, Final Report of the Study for the INSPECTORATE: Monitoring and Enforcing Agency for Environmental Compliance.

**ISRAEL**

**STATE OF ISRAEL**  
**MINISTRY OF ENVIRONMENT**  
**Marine and Coastal Environment Division**

**Israel's environmental background and emphasis**

Since the establishment of the State of Israel in 1948, the country has experienced a rapid growth in population, urbanization, industrialization and intensive agricultural practices.

Until recent years, security and economic concerns largely determined government policy regarding development projects. Environmental concerns were rarely considered. Today, however, environmental issues play an ever growing important function in the decision-making process and in the political and statesmanship agenda.

Within a year from the 1972 Stockholm Convention on the Human Environment, the Israeli Environmental Protection Service (EPS) was established under the auspices of the Ministry of the Interior. In December 1988, the Ministry of the Environment was officially established as the central agency for environmental protection in Israel.

It is widely accepted in general, that water scarcity might be the most crucial environmental problem facing Israel today. The problem is exacerbated by the deteriorating quality of water resources due to demographic, industrial and agricultural pressures. Preservation of the quantity and quality of Israel's water resources – underground aquifers or natural and artificial reservoirs - may be the most important environmental challenge facing Israel.

The second most pressing environmental problem is the absence of open space and green unused land. The unrestricted, so it seems, phenomena of urban sprawl is overwhelming with its implications and disastrous potential to kill the nature and open air.

Both of these “land” environmental problems are closely related to the Marine Environment preservation and pollution prevention from land-based sources. This is because of the fact that urban sprawling is sliding to the sea shores with all its implications on the marine biodiversity and ecosystems. In addition, this means more urban sewage effluent to be treated. Moreover, the drinking water scarcity is a prime concern so everything is being done in order to preserve and protect this valuable source.

For example, the Mediterranean plays an active roll in the attempt to discharge the brines and salty wastewater (Na, Cl and PO<sub>4</sub>) from industrial plants into the sea, under a special permit. This is done of course in order to save the local underground drinking water that are harmless to the sea when are diluted in it.

The need for regulation, and managing compliance with the legislation demands of discharges into water sources or into the seas, is therefore apparent. This cannot be achieved without strict and uncompromising inspection and enforcement array of dedicated people and hardware.

**Main legal powers of the Ministry of the Environment**

The Prevention of Sea Pollution from Land-Based Sources law - 1988, which entered into force in 1990, deals with the major source of marine pollution. Under

the law, discharge of waste is prohibited, including wastewater, into the sea in all cases where practical and economic alternatives for treatment or reuse exist on land, under the condition that such processes are less harmful from an environmental point of view.

An interministerial permit committee, chaired by a representative of the Minister of the Environment, determines what may or may not be discharged into the sea and under what conditions. The conditions and criteria for granting permits and the types of waste, which may not be discharged into sea, were established according to the provisions of the Land-Based Protocol of the Barcelona Convention.

When a permit is granted, it is regulated through a strict permit system. As in the Dumping of waste law, courts may impose fines and even Imprisonment on the offender. MCED inspectors, together with regional professional wastewater inspectors, enforce the law by carrying out criminal investigations whenever a violation occurs.

Regulations under this law include terms and conditions for issuing permits, and lists of substances, which may or may not be discharged into the sea. Although it will probably take 2-3 years to regulate all industrial emissions to the marine environment it can be assumed that inspection and law enforcement will result in a significant decrease in marine pollution along the coasts.

Unfortunately, the fines set by the legislator, ten years ago, were not deterring enough, hence the slow progress in compliance, the main deterrent under law is the criminal record, from which plant owners & managers try to avoid as a general rule, so to speak.

Another deterrent action is a personal fine, which might not deter a plant owner, but certainly may have a different effect on a general manager.

Although The Prevention of Sea Pollution from Land Based Sources law – 1988, (PSP-LBS), is the main tool used by the ministry's inspectors, when carrying out compliance inspections, other legal options are available. These options are drawn from a set of environmental main laws, bylaws, regulations, ordinance and administrative decrees, by which the Minister of the Environment is empowered. These legal tools include mainly the following:

- **Water Law, 1959**

This law establishes the framework for the control and protection of Israel's water sources. A 1971 amendment to the law introduced new water pollution prevention provisions under the responsibility of the Ministry of the Environment. Other provisions of the Water Law fall under the responsibility of the Minister of Agriculture and the Water Commissioner.

- **Licensing of Businesses Law, 1968**

The law empowers the Minister of the Interior, in consultation with the Ministers of Health and the Environment, to designate and define businesses requiring licenses in order to ensure: proper environmental

conditions including appropriate sanitary conditions, the prevention of nuisances and compliance with the Planning and Building Law; the safety of those on or near the premises of the business; and the prevention of pollution of water resources by pesticides, fertilizers or medicaments. The head of the local authority in whose jurisdiction the business is located issue licenses under the law.

This is a powerful law that entitles the MoE inspectors to conduct wall to wall inspections and to really get involved in the plant's housekeeping.

- **Prevention of Sea Pollution by Oil Ordinance (New Version), 1980**  
This law forbids discharge of oil or oily substances into the territorial and inland waters from any shore installation or vessel, and makes any such act a criminal offense. The Minister of the Environment is empowered to appoint inspectors to discover or prevent violations. The law establishes maximal fines for oil spills and liability for cleanup expenses.
- **Prevention of Sea Pollution (Dumping of Waste) Law, 1983**  
This law prohibits the dumping of any waste from vessels and aircraft into the sea, except under permits which may be issued by an interministerial committee, headed by a representative of the Minister of the Environment. A court convicting an offender under this law may require, in addition to the fine levied, payment of cleanup expenses or of locating the waste dumped into the sea. The law provides for the appointment of inspectors to carry out inspections, investigations and searches to prevent or discover offenses.
- **Maintenance of Cleanliness Law, 1984**  
This law forbids littering or the disposal of waste, building debris and vehicle scrap into the public domain. It also requires municipalities to establish sites for the disposal or collection and treatment of construction and demolition debris, yard waste, tires and vehicle scrap.
- **Hazardous Substances Law, 1993**  
This law authorizes the Minister of the Environment to license, regulate and supervise all aspects of the manufacture, use, handling, storage, marketing, import, export and transport of hazardous substances. Licenses are required for any premise selling hazardous materials, and permits are required by any business dealing in poisons. Three fine levels and imprisonment terms have been set according to the severity of the offense.
- **Water regulations (water pollution prevention) (prohibition of brine discharge into water sources) - 1998**  
Under this regulation, brine discharge into water sources is prohibited unless a permit is granted, and even then, the discharging is permitted into the ocean or through a sewage treatment plant into the ocean. The penalty for an offender under this regulation, is one year imprisonment, or a fine of 65,000 \$US.

### **Additional Criminal actions –**

- **A Cleaning Decree** – Issued mainly to the head of a local authority, but can be applied also to property owners &/or plant owner/manager. Chiefly used in case of non-compliance regarding bulk waste.
- **A Citation** – Issued “on the spot” to an offender, be he a civilian or a company. The fines vary according to the severity of the harmful affect on the environment, up to 1,500 \$US.
- **The Criminal Investigation** - The final way-out to deal with violators and lawbreakers. Usually carried out against companies, but will be used against anybody, in case of severe harm caused to the ecosystem. The principle here is very clear: file charges to the court of law in order to receive the highest possible punishment, to create deterrent effect.

### **Non-criminal action (also called “administrative action”)-**

- **A letter of warning** – As a first measure, a polluter receives a letter (polite but firm), asking for compliance, in a time frame set by the ministry.
- **Hearing** – As a second measure, a polluter is asked to a ‘Hearing’ meeting, in which he is confronted, by a pier of experts, and is given or not, according to his response, a second opportunity to comply with the regulations set by law. If he denies the charges, legal actions commence immediately.
- **Shutdown decree** - under the business licensing law, it is possible to be carried out by an official who was empowered for such action by the Minister of the Environment. This is a powerful tool to be carried out only against rough violation and repeating violator.



## **Marine pollution from Land-Based Sources – successes as result of stringent enforcement and compliance control**

The Ministry of the Environment supervises and enforces all land-based sources of marine pollution within the framework of an inter-ministerial permit committee. In view of the regional commitments and national policy, Israel's marine protection policy calls for the elimination of all land-based sources of sea pollution. Ministerial policy is based on the following objectives:

- To minimize discharges to sea to the greatest degree possible by reviewing land based alternatives such as connection to municipal sewage systems, irrigation reservoirs or source reduction in every plausible way.
- To minimize pollutant emissions through installation and operation of Best Available Technology;
- To require continuous improvement of wastewater treatment facilities and alternative land solutions, to stipulate conditions and requirements in permits, and to follow up on results;
- To allow discharge to sea of wastes which may damage land resources but not the marine environment, such as brines;
- To permit discharge of authorized wastes through regulated coastal outfalls only;
- To require wastewater quality monitoring and/or marine monitoring;
- To operate according to stringent and advanced international standards;
- To enhance cooperation with the district offices of the ministry and with associations of towns for the environment.

Israel's coastlines on the Mediterranean, Red Sea and Dead Sea include some 70 industrial plants, 100 facilities which contribute brines and groundwater, and 40 local authorities and other smaller sources of sanitary wastewater.

In recent years, major progress has been made in preventing pollution from land-based sources, including domestic and industrial waste, agricultural runoff and river discharges. Increased supervision and enforcement of the Prevention of Marine Pollution (Land-Based Sources) Law –1988 and its regulations, coupled with better information and guidelines to industrial plants and municipalities have actually helped reduce the number of legal claims while improving marine quality.

Improvements were made in several areas: the main quantity of sewage discharges to the sea were stopped; wastewater treatment facilities were upgraded and effluent quality was improved; waste streams in industrial plants were separated to enhance treatment; a sewage monitoring and control program on the sea was instituted; marine outfalls were combined; and a new outfall was established to halt previous discharges to the shore.

Following are examples of strives for compliance, and efforts that were made by major polluters during recent two to three years:

- Israel Electric Corporation: Preparation and partial implementation of a \$45 million program for wastewater treatment in five coastal power stations.
- EIL (formerly “Frutarom Acre”): Implementation of a \$6 million plan for improving effluent quality and production and treatment processes which reduced

mercury emissions from 50 kg to about 5 kg per year. Initiation of a plan to reduce organic pollutants.

- Rafael: Sewage discharge to the sea stopped in 1997, the plant's wastewater treatment facility was expanded, and effluents were used for irrigation.
- Israel Defense Industries, Haifa: Sewage discharge to the sea stopped in the winter of 1996-7, wastewater treatment facilities were installed along with a collection system for sanitary wastes.
- Haifa Chemicals: Initiation of a \$15 million plan to significantly decrease wastewater discharge to the Kishon River and to significantly improve seawater quality in Haifa Bay (nutrients and heavy metals).
- Agan Chemicals: Installation of an advanced system for the separation of solids and a facility for the separation and recovery of an organic solvent (which constitutes a third of the organic load). Completion of a pilot facility for biological treatment of wastes.
- Ashdod Oil Refineries: Improvements leading to better effluent quality and initiation of a \$300,000 pilot facility for biological treatment.
- Wastewater treatment plants: Completion of a wastewater treatment plant in Hadera; initiation of treatment plants for Ra'anana, Jerusalem and Carmiel; agreements for the construction of treatment plants in Acre and Nahariya; and initial expansion of the Haifa wastewater treatment plant.

### **Pollution Control and inspection system on Land Based Sources - MCED**

Marine and Coastal Environment Division (MCED) inspectors, each in his/her territory, carried out a survey in order for a national discharge priority set and selection criteria list could be created, based on flow rates, levels of contaminants and their impact on the marine environment.

Inspection database of the past few years has resulted in the recent completion of an inspection & enforcement handbook, which will be put into operation during the first quarter of 2001. It is based on USEPA & Dutch manuals and was tailored to suit the needs and capabilities of the Ministry of Environment in Israel.

The inspection program for a certain plant or facility, is based on a first inspection which is carried out 'wall to wall' to set ground zero for further control. This is followed by periodically visits of the facility, depending on its potential of marine pollution. A basic inspection would be searching first and foremost for 'good housekeeping' symptoms of the facility. When this will not be the case, the plants will automatically set it self on a priority list to further checks and visits.

Inspections are carried out both randomly (at all hours) or in coordination with the specific body to be inspected.

This applies to any body discharging its effluent directly or indirectly into the marine environment, including - publicly & privately owned treatment plants, industrial facilities, etc'.

The frequency of inspections is set by the inspector, according to the need that develops with time, for revisiting the permit holder, according to a set of parameters such as – rate of self reporting, validity of reporting, compliance & non-compliance, geographical position & possible harmful affect on the environment in any case of non-compliance.

Periodical reports from all inspectors are gathered & processed to give an overall view of a compliance/non-compliance balance over time, to assist in evaluating future conduct in dealing with a specific permit holder, such as legal actions that may be needed, or in certain cases less severe actions may be sufficient.

The inspectors are continually trained, to better their professional abilities within the various fields of inspection, such as municipal treatment works, hazardous substances, field tests of water quality, etc.

The Haifa Bay area was selected as the most prominent contributor, of both contaminants & flow rates into the marine environment. For this reason the implementation of this program, has been made primarily for the Kishon River, into which about 80 % of Israel's industrial sewage flows regularly. Although great improvement has been achieved in recent past in terms of levels of contaminants, we are still a long way from our set goals, hence the application of stricter enforcement program and stringent actions to be taken.

### **Improvements in the inspection and control system**

- A major improvement in dealing with local industry is the rise in self-compliance & reporting, of some of the major pollution contributors to the Mediterranean.

It is mainly governmental companies, who self report most of their irregular discharges. These include the Petroleum Refineries, the Israeli Electric Company (IEC), which self reports on an annual average 95 % of its non-complying discharges. Recent self-reporting facilities includes relatively small industrial plants, such as 'Gadot Biochemical industries' which produces food grade citric acid, and 'Frutarom' which produces food grade flavoring additives.

The Ministry of Environment, with full collaboration from a number of chosen industrial facilities, is now in the final phase of an online remote sensing pilot project. For the initial project, the MCED took as the "rabbit" the once infamous 'EIL' plant. Until five years ago, this industrial plant was by far the most dominant contributor of Hg (mercury) to the Haifa Bay area, at a discharge rate of around 30-Kg per annum. EIL is now down to a monthly average of around 160 grams per month, which is an average of 1.9 Kg/yr.

The initial two parameters to be monitored on-line are levels of pH & Hg at the discharge outlet.

The data is sent via phone line and is received at the MOE control center for

hazardous substances, which is manned 24 hrs a day.

The data is displayed on a monitor, as a graph with a colored background, divided according to permissible levels of discharge, to Green, Amber & Red, so that a moderate anomaly is with a yellow background and a severe anomaly is with a red background, so that a quick glance will be sufficient, in order to maintain a continuous watch of the data received.

The MCED plans to add 10 to 15 more facilities during 2001. The long-term plan is to have all major land based sources of pollution to have such sensor on their outfall.

This coincides with the lack of the desired number of on hand facility inspectors, and will fit into the MOE's lack of funding, and will greatly assist the inspectors, both as a deterrent and as on-line data source.

- Another major improvement is the MAOF computer system that was installed on the MCED Intranet. This tailor made software allows the operator or the user to control all facets of the plants and facilities within his\hers jurisdiction. The software is a user friendly, database and management system of all the MoE's nuisances, polluters, plants and facilities. It also holds all criminal and past information, which is valuable for any investigator or inspector in their work.
- Additional tool in the enforcement plan would be the usage of dissemination of pollution discharges via electronic means such as the Internet. The principle is simple. Each permit holder will be notified that his discharges of pollution and parameters relevant to it, will be publicly published via the MCED's website. This simple action will hopefully bring the managing directors to the recognition that such transparency might be harmful to their business if they might not comply with the law's demands. A similar system such as this one, alone, have brought hazardous substance emissions to a major cut down in the USA. That system is called TRI and is reachable through the USEPA's website.

**ITALY**

# 1. ENVIRONMENTAL PROTECTION AT THE STATE AND LOCAL AUTHORITIES LEVEL IN ITALY

Italy's legislative and executive powers are shared among the central, regional, provincial and local levels of government. While broad environmental policy is formulated centrally, implementation is mostly delegated to the lower levels which can exercise considerable discretion in the way policies are interpreted and acted on.

## 1.1 General provisions

General provisions on environment protection and control, in force in our country, include acts issued at national and regional levels, ministerial decrees and European Community directives, issued especially in the last few years.

## 1.2 National political and administrative competencies

### 1.2.1 Ministry of the Environment

After a period when environmental responsibilities were dispersed among a range of governmental departments, the Italian Ministry of the Environment (MoE) was established in 1986 with Law 349 and started its operations in early 1988.

The MoE functions can be grouped as follows:

Legislation	<ul style="list-style-type: none"><li>- Formulation of new proposals of legislation</li><li>- Proposals for the incorporation of EC Directives and international agreements into Italian Law</li></ul>
Co-ordination	<ul style="list-style-type: none"><li>- With the Regions</li><li>- With other central government Ministries and Agencies</li><li>- With advisory bodies</li></ul>
Planning and programming	<ul style="list-style-type: none"><li>- Three-year Environmental Management Programmes</li><li>- Designation of areas of high environmental risk</li><li>- Environmental and economic studies</li></ul>
Regulation	<ul style="list-style-type: none"><li>- Permitting</li><li>- Environmental impact assessment procedures</li></ul>
Enforcement	<ul style="list-style-type: none"><li>- Ecological Operative Unit of Carabinieri (assigned to MoE)</li></ul>
Information and Education	<ul style="list-style-type: none"><li>- State of the Environment Report to Parliament (every 2<sup>nd</sup> year)</li><li>- Environmental information</li><li>- Environmental education and training.</li></ul>

The Ministry of Environment deals with water, waste and soil, air pollution, noise and industrial risks, sea defence, as well as protection of nature and integrated assessments; the extent of its responsibilities depends on the subject matter. For

example in some areas (e.g. water) its role is to set National policy, to prevent water pollution and to prepare general recovery plans, while the lower levels of governments are responsible for implementation (permitting, enforcement, etc.). In other areas it exercises a more direct role in the implementation policies.

### 1.2.2 Other ministries with environmental responsibilities

Many issues that fall under the responsibility of the Ministry of the Environment are also of concern to other central government ministries:

#### Ministry of Public Works

Is responsible for the planning and financing of transport infrastructures, water supply and distribution networks, and co-operates with the MoE in the field of water management and soil conservation.

#### Ministry of Cultural and Environmental Heritage

Has powers in the area of land use planning related to the protection of landscape and natural sites of special interest.

#### Ministry of Health

Co-operates with the MoE in matters of water pollution, standard setting for outdoor and indoor air quality etc.

#### Ministry of Education

Co-ordinates environmental education initiatives and co-operates with the MoE to disseminate environmental information in schools.

#### Ministry of Transport

Is concerned with the environmental effects of transport, e.g emissions into air.

#### Ministry of Industry

Is involved in the environmental aspects of industrial production, including energy production and distribution and emission protocols.

## 1.3 Regional and local administrative competencies

Italy consists of 20 regions, 103 provinces and 8,102 municipalities. Five regions have a higher degree of autonomy and one of them, Trentino Alto-Adige, is made up with two autonomous provinces .

The ability of regions and provinces to carry out the responsibilities delegated to them by National legislation varies widely due to differences in size, available resources, and administrative culture. Their degree of autonomy also depends on the subject area. (Table 1).

### 1.3.1 Regions

The Italian Republic is generally defined as a *Regional State*.

Regional legislative competencies are described in the Constitution (article 1171)

Law n°59/1997 introduced a new type of organisation.

Therefore, with specific reference to the subject in question, the Region can, according to its own laws and to general principles of the State legislation, identify

forms with which local Bodies can carry out active administrative functions in the sector of environmental public services (water, waste materials, etc.).

Regions must also carry out primary duties related to planning. By means of environmental policies and plans, the Region dictates rules, provisions and bonds connected to the rational use of resources in large-scale territorial areas.

Regions, in general, have the duty of fixing guidelines for the choice, made by local bodies, of level two planning instruments (provincial plans, general territorial plans, etc.).

The Regions can also establish environmental standards and requirements for their territories, in addition or for implementation of national laws and regulations.

### 1.3.2 Provinces

Provinces are intermediate bodies which carry out administrative functions regarding vast intermunicipality areas or the whole provincial territory.

The Executive Committee provides general approach directions defined by the Council and carries out proposal and impulse activities.

The most important component is, undoubtedly, the President.

The President of the Province is elected directly by the citizens and is responsible for the administration.

Article 14 of the Law 142/1990, allows the identification, within the Province, of the main operative principle for the government of the environment both from a strictly administrative point of view (authorisations and approvals) and from a technical point of view (controls and analyses).

The Province, in particular, is in charge of administrative functions with regards to the following sectors: soil protection, protection and utilisation of the environment, prevention of calamities, protection and utilisation of water and energy resources, protection of the flora and fauna, of natural parks and reserves, organisation of waste disposal at provincial level, recording of discipline and control of water discharges, air and sound emissions, sanitary services of hygiene and public prophylaxis entrusted by the regional and state legislation.

Apart from general functions, assigned to the Provinces by the Law 142/1990, competencies provided by sector provisions are worth noting. These are: drawing up of the cadastre for public and private discharges into surface water bodies (Law 319/1976), control over the total discharge management (Legislative Decree 22/1997), control over the application of general criteria for a correct and rational use of water (Law 319/1976) and keeping of the inventory of air emissions (Decree of the President of the Republic 203/1988).

### 1.3.3 Municipalities

In the environmental field, municipalities are mainly in charge of the management of public services (sewage, purification, integrated water service, disposal of solid urban waste, recording of urban air pollution, etc.).

Municipalities are the main authorities in charge of regulations such as connections and discharges in public sewage, unhealthy and dangerous processing, noisy activities and professions. Finally, it is worth noting that the Mayor, with respect to needs of protection of public health and of the environment, can adopt urgent decrees to eliminate serious dangers which threaten the safety of citizens and the integrity of the ecological system.



## 1.4 Technical bodies: the system of environmental agencies

Before 1993 the duties of environmental control and surveillance were entrusted to the National Health Service that operated through local units.

A public referendum was carried out in April 1993 which cancelled these provisions. Referendum results established a new organisation, with the Law n°61/1994, composed of a network of regional agencies, collaborating with a central Agency. The latter is also the national reference point for the European Environmental Agency.

### 1.4.1 The National Agency for Environmental Protection (ANPA)

The National Agency for Environmental Protection (ANPA) was instituted with the Law 61/1994 in January 1994; it benefits of a scientific and managerial independence. It carries out functions of national and international interest and of co-ordination of the technical activities of the regional agencies.

ANPA was established. The same law also tackles important environmental problems related to procedures and co-ordination of the various Bodies at different levels.

General functions of ANPA are defined by this law:

- Technical and scientific activities of national interest for environmental protection;
- technical co-ordination of regional agencies, in order to harmonise operational methods;
- advice on activities and technical assistance to the Ministry of the Environment and other public administrations.
- promotion of applied research on the environment, on pollution situations and ecosystems protection.
- systematic collection and publication of data on environmental conditions.
- data processing and dissemination of information on the state of the environment and the promotion of the relevant training and education programmes.
- submitting to central and local administrative authorities, in co-operation with regional agencies, of proposal for acceptable limits for pollutants and controlling factors for the various aspects of environmental related problems.
- control of the physical, chemical and biological factors related to noise, air, water and soil pollution, including those on environmental health.
- co-operation with the European Environmental Agency.
- promotion of research and dissemination of ecologically compatible technologies, production systems and products, also with reference to the Ecolabel and EMAS.
- technical and scientific support activities for Bodies responsible for evaluating and preventing industrial risk.
- licensing and environmental control of activities related to peaceful use of nuclear energy and the relevant radiation protection.
- technical support for the evaluation of environmental impact studies.

### 1.4.2 The Regional Agencies for Environmental Protection (ARPA's)

Regions (and autonomous Provinces) have to establish regional agencies for environmental protection (ARPA: Agenzia Regionale per la Protezione dell'Ambiente) endowed with technical, legal and administrative independence first of all utilising the technical structures which were already operating in the field of environmental controls.

Regional agencies are divided into provincial or sub-provincial departments and territorial services and also supply provinces and municipalities with assistance to for respective duties on environmental matters.

The main duty of regional agencies is to guarantee performance of analytical activities and technical functions of control and surveillance requested by local bodies, by the region, by local health units or directly by judicial authorities.

Around these fundamental duties, Agencies carry out, *ex lege*, activities of assistance to the region and local authorities for the preparation of environmental plans and projects as well as the promotion of products and systems of production with reduced environmental impacts.

In particular regional agencies must perform the control and monitoring of physical, chemical and biological factors relevant for prevention purposes and for the reduction or elimination of noise, water, air and soil pollution. They are also required to organise in a systematic way data on the state of the environment and make them available to authorities, to national and international scientific bodies and to the general public.

Therefore these agencies are prepared to carry out inspections, site visits, samplings, measurements, collect technical data and information, manage fixed monitoring networks, create data banks by gathering, verifying and evaluating environmentally relevant data.

At present 16 regions have approved the law for the institution of the regional agency (Piemonte, Val d'Aosta, Liguria, Veneto, Trento e Bolzano, Friuli Venezia-Giulia, Emilia Romagna, Toscana, Marche, Umbria, Lazio, Abruzzo, Campania, Puglia, Basilicata and Molise), 11 of which are fully operational and 2 still lack the appointment of the Director.

It could be here interesting to notice that the introduction of these agencies on the scene has changed the way in which environmental prevention and control are exercised in the regions where the agencies have been operating for some years.

Some of the ARPA's are now preparing annual monitoring and inspection programmes generally on a provincial basis, based on pressure indicators, legal requirements, evaluation and prevision purposes and optimisation of resources.

## 2. Environmental Legislation

### 2.1 Legislation and/or guidelines existing for the control of seawater and inland water quality, and for protection of habitat

#### *The seawater quality*

The seawater quality is regulated by the DPR n. 470/82, Law n. 979/82 ("Provisions for the protection of the sea") and subsequent amendments. Another relevant Law for the protection of the seawater is the Law n.220/92 ("Actions for the protection of the sea") and its amendment, that among other things gives the competence to the Central inspectorate for the seawater protection of the Environmental Impact Assessment procedures for projects and activities in the seawaters.

The Law n°319/76 which regulates modalities of wastewater discharges, monitoring of the characteristics of the freshwater bodies, and asks the territorial authorities the reduction of regional plans, for water quality improvement and sanitation, has been abrogated by art.63 of the Law 152/99.

DPR n° 526/1994 is quite relevant to this matter as it is concerned with specific provisions for the environmental impact assessment of activities linked to hydrocarbons research and exploitation.

#### *Inland water quality*

Inland water quality is regulated by several laws, Acts, and subsequent amendments.

First of all the Law n°152/99 just mentioned for seawater quality.

The Law n. 183/89 "Soil conservation Act", which has created six national level River Basin Authorities and gives the competencies to regional governments to set up interregional and regional River Basin Authorities. The aim of the law is to plan all action on the river basin taking into account, inter alia, flood and landslide risk, water quality, surface water use, minimum vital, flow limits, etc.. The Law n. 36/94 which has created the Optimal Territorial Areas to be defined by regional laws, introduces active promotion of rational use, reuse and recycling, and improved management structures for water supply. The Provinces are responsible for the registration and control of all discharges into surface waterbeds.

In order to secure that inland water resources are not overexploited, licensing is subjected to legally binding conditions, the abstraction permit may cease its effects when the legally indicated environmental river flow is assessed below its required level. Italy included a specific reference to abstraction control for irrigation with the RD n.1775/33 as amended by DL n. 275/93 (Provisions on public water concessions).

More recently the Law n.180 1998 assumes relevance since it faces the hydro-geologic risk and introduces remedies and tools for its prevention in areas particularly sensitive in Campania.

#### *The protection of habitats*

The protection of habitats is regulated by the Law n. 394/1991 ("Law on Protected Areas") which introduced a framework for an adequate planning of the sector and for a distribution of responsibilities among State, regional and local administrations.

The DPR n. 357/97 has instead implemented the EU Directive 92/43/CEE on habitat (flora and fauna) conservation.

## 2.2 Legislation or guidelines existing for the regulation of the following sectors:

The sectors of industrial wastewater disposal, air quality, industrial solid waste disposal, urban development, domestic wastewater disposal, incineration of wastes, urban solid waste disposal and new infrastructure projects are fully controlled by the existing regulations; the animal breeding and agriculture sectors are controlled to a large extent by the existing regulations.

### The existing provisions in legislation for:

#### *the Environmental Impact Assessment of new projects.*

EIA EEC directive came into force with the Law 349/86 (Regulation on environmental damage) the DPCM 377/88, the DPR 12/04/1996 and the DPR 11/02/1998. DPR of 1996 states that all Italian regions should have issued regional laws about the EIA procedures. It classified if the competencies for the new projects EIA procedure is of the State or of the Region, if is the new projects EIA procedure is compulsory or not; and in this last case the decision has to be taken on a case by case basis according to some fixed criteria. At present only nine Regions have operational EIA procedures (Provincia autonoma di Bolzano, Provincia autonoma di Trento, Valle d'Aosta, Friuli Venezia Giulia, Liguria, Toscana, Umbria, Abruzzo, Basilicata).

#### *The permitting of new projects:*

D. Lg. n. 112/98 introduced two procedures for carrying out new projects, that are: simplified procedure with an self-certificated demand to the Region and demand to the Region without autocertification. In the case of enlargement, reconversion, restructuration, of existing plants, the decree requires a simple communication to the Municipality. The introduction of these procedures depends on the establishment, in each Municipality, of a Single Counter, which will be responsible of these simplified procedures (as established by the D.M. n. 57/97). The simplified procedure can not be applied in some specific cases identified by the D. Lg. 112/98 (such as the waste treatment activity).

#### *The periodic permit renewal:*

The periodic permit renewal depends on the provisions of the specific laws in the different sectors, in any case all these laws impose periodical controls. For example, Law n.30/1994 fixes a maximum (15 years) for licences granted for industrial large withdrawals.

Generally licences granted by competent authorities in environmental field for operational activities, last for 4-5 years.

#### *The inspections for compliance control*

The compliance control is carried out, on all national territory, by the Inspectors teams, also supported by technical bodies members.

#### *The compliance promotion and enforcement in cases of violations*

Generally, in cases of violations an adjustment period is allowed and a new inspection for checking the actual corrective actions is scheduled.

## 3. Permitting

### 3.1 The permitting system in Italy

#### *Industrial activities*

The number of competent Authorities is in general high. In the last years an examination of procedures has started for aiming at some simplified permitting systems. In Italy permits for all industrial activities whether for building or for operating are required. These permits are always required by companies. In particular, the industrial activities with major accident hazard are identified and subjected to safety procedures under DLgs 334 (August 1999). Such kind of manufacturers are also required to notify, together with a safety report, to the Ministries of the Environment and Health and to the regional government concerned, in the cases of overcoming of the quantity of processed or stored substances with respect to the established thresholds.

DPR 203/88 is relevant in terms of atmospheric emissions released by industrial activities, D lgs 152/99 for authorisation of effluents in the water and use of public water.

#### *Animal breeding*

The principal provisions about the permitting system for the animal breeding activities are those relevant for the Hygiene and Security on the Work Places.

In particular:

D.lgs. 508/92 "Implementation of Directive 90/667 which sets the regulation for hygiene norms intended to eliminate, transform and distribute (within the market) animal waste and the protection of animal feeding from pathogen agents.

DM 26/03/94 "Collection and transport of animal waste

Circolare issued by the Ministry of Health concerning the collection, transportation and storage of highly risky materials to be sent to treatment and transformation facilities.

D.lgs. 537/92 " Implementation of Directive 92/5/CEE concerning health public problems in the field of production and trade of good based on meat and derivatives from animals".

Sanitary authorisation for the setting up of meat treatment facilities, granted by the Ministry of Health.

Sanitary authorisation for the transportation of highly risky animal waste, granted by U.O Animal Health (DPR 320/54, D.lgs. 508/92, DM 26/03/94).

#### *Urban development*

There are municipal and regional provisions concerning the Town Planning Scheme and the specific permits and authorisations for urban development activities.

#### *Domestic wastewater*

They are discharged to the public sewerage system through a prior demand to the Municipality. Moreover, the wastewater disposal licences system was established by the Law n. 319/76. The licences are granted on a permanent basis when the discharges comply with the quality standards envisaged by the law, whereas only

provisional licences are granted when the quality of the discharges does not comply with the regulations.

#### *Incineration of wastes*

Waste incineration activities must comply with a certain number of regulations, among which, EIA, building permit, construction and operation authorisation, air pollution emission authorisation and monitoring, discharge authorisation. D. Lg. n.22/97 establishes the demand to the territorial competent regional authority, for the installation of incineration of wastes. Moreover, the same decree establishes that from 1/01/1999 on the permits for incineration plants installation are granted only when the incineration activities are oriented to heat production.

#### *Solid waste disposal*

Solid waste disposal requires always the permits of the territorial competent authorities and an EIA. For industrial waste an national EIA is required.

#### *Infrastructure project*

The infrastructure projects or restructuration of already realised project are subjected to the permit legislation which establishes the EIA procedures.

### 3.2 The main authorities responsible for permitting

They are: Ministers, Regions, Local Authorities (Provinces, Municipalities).

### 3.3 The effectiveness of the permitting system in Italy

- All new projects are subjected to the EIA procedures if they are included in the type individuated by laws.
- Permits are always issued for new and existing projects.
- Industry is subjected to a periodical renewal of permits.
- Italian industries have drawn up some voluntary agreements among their specific sectors (for example the Responsible Care Programme which has been sought by many chemical industry in order to implement an environmental management of their activities) and between them and government in order to improve environmental condition in the industrial activities (such as the agreement between Ministry of Industry and Tanning Industries to promote the EMAS implementation in a large number of these industries).

### 3.5 Access to information on general environmental issues

Law 241/90 establishes new rules for the administrative procedure and for the right to have access to administrative documents. Moreover, the D. Lg. n.39/97 applying the EU Directive n.90/513, concerning the right to have access to environmental information by the public.

## **4. Compliance and Enforcement**

### 4.1 How compliance is promoted in Italy

Compliance is regulated in Italy principally by "command and control" regulation and legislation system. In the last years, some financial instruments for the

environmental protection and improvement are introduced in Italy (such as Law n.488/92, Law 598/94, Law 341/95, environmental fiscal incentives in the 1997 Financial law).

## 4.2 How compliance is checked in industrial plants prior to production

Compliance is always checked in industrial plants prior to production both by the testing of the plants and the control of compliance by competent inspectors.

## 4.3 Provision when complaints are lodged

When complaints are lodged the inspections are systematic and are carried out by the competent control authorities (in particular the Aziende Sanitarie Locali - Local Sanitary Company).

## 4.4 Periodic control and inspection on activities which have permits

Periodic control and inspection on industrial plants which are authorised carried out on a regular base. Controls and inspections on animal breeding activities, on urban development activities, on domestic wastewater disposal, are carried out when required.

## 4.5 The main authorities responsible for compliance and enforcement

There is a relatively large number of bodies involved: **Ministries:** Environment, Health; **Local authorities; advisory committees:** Ministries of Health and Civil defence **technical bodies:** Institute for Prevention and Safety at Work (ISPSSL), Institute of Health (ISS), National Firemen Corps, Ecological Executive Squad and Anti-Adulteration Unit belonging to the Army of Carabinieri, State Corps of Foresters.

### When a violation is verified

When a violation is verified there is always an administrative response and re-inspection for corrective actions, and sometimes criminal prosecution.

## 4.6 Means of compliance promotion and enforcement

The main instruments are represented by the voluntary agreement and by financial and fiscal incentives. Other important means of compliance promotion and enforcement are:

- regulatory instruments conceived to make the public aware of qualitative status of sites liable to be pollutant;
- the availability of consultation means about environmental indicators that can be easily understood by everybody;
- the diffusion and the improvement of environmental available information towards companies and public;
- the introduction of the environmental law in the criminal code;
- a better co-operation at international level between responsible authorities and inspectors existing at national level.

## 5. Environmental monitoring

### *Seawater quality*

The systematic monitoring activities for the seawater quality, has been introduced by the Law n.979/1982 for the protection of seawater. In particular, the monitoring of bathing waters (DPR 470/82) takes place twice a month, during the spring-summer season. In 1992 another law on "Actions for sea protection" (law n. 220 - February 1992) was enacted.

The national monitoring programs for the trophic conditions of the coastal waters and the accumulation of some contaminants in the biota (bivalve molluscs), were set, since 1990, on a Regional scale, in the Adriatic sea, and extended to all the other Regions, after 1997. These programs are controlled by the Ministry of Environment, ICDM (Central Inspectorate for the Defense of the Sea), and the data are collected in the SI.DI.MAR. database.

Another national monitoring program was set, after the mentioned law 979/1982, for bathing waters and it is still operating for chemical, physical and microbiological quality control of internal and marine coastal waters. This program is under the Ministry of Public Health control.

Recently two combined legal and structural responses have been developed to support a new water policy:

- a new national water framework law (n°152) enforced in May 1999, which integrates and repeals the different laws in act (about 20 laws and regulations) for water monitoring. This legislation is very similar (same conceptual basis and principles) to the new EU Water Framework Directive;
- development of an integrated Environmental Protection Agency network: the national ANPA and 20 regional Environmental Protection Agencies (ARPA) and implementation of a national environmental information system (SINA), ruled by ANPA which is the Institution linked to the National Statistic System.

The overall purpose of new Italian law (and the EU Directive) is to establish a general discipline for surface fresh water, transitional waters (estuaries, brackish coastal lagoons), coastal waters and groundwaters with the aim at :

- preventing further deterioration, protect and enhance the status of aquatic ecosystems and connected terrestrial ecosystems;
- promoting sustainable water use based on a long-term protection of available water resources.

All significant water bodies are defined according to specific dimensions of catchment basin or other quantitative parameters and are considered as ecosystems directly connected to a territorial district: "the basin district" defined as the most significant territorial unit.

The water bodies integrated and complex ecosystems have to be monitored and controlled in each of their components: chemical and physical status of water and sediments, impact on biota, presence and accumulation of micropollutants.

For each different type of water body environmental quality classes are defined and the quality objective of a Good environmental status is fixed to be reached by the year 2016, for all significant water bodies; a specific monitoring and classification procedure is defined to classify the water body according to a scoring method.

In the case of marine waters, monitoring programs are already operating: they will be implemented according to the new legislation and to recent and future perspective in the marine environment research.



Data collection is proceeding too, according to the recent legal instruments and the collaboration among the different administrations and institutions involved in the marine environment management and research.

#### *Inland water quality*

The normative framework related to the inland water quality refers to D. lgs 152/99 “

D.lgs 152/99 “Provisions on water protection from pollution – implementation of Directive 91/271/CEE concerning the urban waste-water treatment and Directive 91/676/CEE relating to water protection caused by agriculture-based nitrate.”

Law N° 61 /1994 ”Re-organisation of environmental controls and setting up of the National Agency for Environmental Protection”

D.Lgs. N° 194/1995 “Implementation of the Directive 91/414/CEE in the field of marketing pesticides” (Art.17).

#### *Industrial wastewater*

The ARPAs are responsible for the monitoring and pollution control of all discharges into surface waterbeds. D. lgs 152/99 deals with this subject.

#### *Industrial solid waste*

Recently, with the introduction of the MUD (Environmental Declaration Verified Model) by the Law n.70/94 (Provisions for the simplification of the environmental, health and public safety requirements), every year, the company declares to the territorial competent Chambre of Commerce, the characteristics of the wastes, and the destination of waste (recycle, reuse, incineration, landfill). The company also has to report all information on produced waste on the loading and unloading register. At moment, MUD seems to be an effective tool for the creation of a Cadastre for the Industrial Special Wastes, Disposable as urban wastes and toxic wastes as Law n. 475/88 disposes. In 1996, first year of practical implementation of MUD, about 500,000 companies have made their declaration.

The following environmental legislation is particularly concerned with the identification of the different tipologies of waste and the modalities of their treatment:

- D. Lgs n° 22 /1997 “Implementation of Directive 91/156/CEE on waste, 91/689/CEE on hazardous waste and 94/62/CE on packaging and packaging waste”.
- D.M. 5 February 1998 “Identification of hazardous waste subjected to the simplified procedures in compliance with the D. Lgs n° 22 /1997.
- D.M. n° 372/1998 “Regulation on the re-organisation of the waste register”

#### *Domestic wastewater disposal*

The Regions are entrusted with monitoring of discharge installations connected to public sewerage; whereas the municipalities are entrusted with water supply and wastewater treatment. ARPAs and ASLs are charged of the quality monitoring.

Relevant to this matter is the already mentioned D. Lgs. 152/99.

#### *Incineration of wastes*

Monitoring takes place by the licences and permits systems in place. ARPAs and ASLs are charged for emission quality monitoring (see D. Lgs n°22/1997).

#### *Municipal solid wastes*

Also this activity is subjected to the Law n.70/94 concerning the MUD. In particular, in 1996 about 7,000 municipalities have presented the MUD.

#### Other relevant information

The Ministry of Environment is due to refer to the Parliament and to the State Audit Court each year about the activities, actions, investments and programs in progress on Environment. Moreover, in the period of three years, the Minister issues a report on the State of the Environment including current data about the different sectors that directly or indirectly influence the environment.

Table 1. Schematic distribution of responsibilities among governmental levels

	Air/Noise	Water	Waste	Industrial Risk	Nature
<b>Central</b>	Standards; national plan; permitting for power stations and refineries	Co-ordination; planning; approval of regional plans; permitting of dumping from -ships at sea	Framework setting; co-ordination and approval of regional plans; direct substitution for laggard regions	Safety standards; instruction; monitoring; emergency plans; information	National plan; creation and direct management of national parks, nature reserves, marine reserves
<b>Regional</b>	Air quality plans; permitting of plans; combustion facilities and significant air emission; fixed sources of noise pollution	Water purification permitting; permitting and enforcement of implementing legislation; data collection for surface and drinking waters	Planning; siting; data collection any plant with discharges;	Same as above for lower levels of risk	Approval of park schemes; supervision
<b>Provincial</b>	Inventory of emission sources; control	Inventory of discharge sources; permitting and enforcement for discharges into surface waters	Permitting under delegation from regions; compliance checking; monitoring of landfills		
<b>Local</b>	Monitoring industrial emission; smog control in large cities; control of noise pollution by vehicles	Delivery of water supply and waste water treatment services; permitting of discharges into sewer systems	Waste collection and disposal		

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**LEBANON**

# LEBANON

## 1. INTRODUCTION:

Pendant les dernières années, des efforts sérieux et importants ont été fournis à tous les niveaux administratifs. Néanmoins, il est évident, que nous avons encore beaucoup de choses à faire sur le plan institutionnel, dans le domaine de l'efficacité administrative, de l'établissement et de la fortification des structures de contrôle et d'inspection, de la réhabilitation des laboratoires et des appareils d'analyse, des législations et des dispositions juridiques, des mécanismes d'enforcement et des programmes de surveillance ponctuelle et continue.

Des études sont effectuées pour établir des stratégies de gestion dans les différents aspects de la politique environnementale. Un plan national de gestion des déchets industriels est déjà mis au point. On achève la phase préparatoire de sa réalisation. Une stratégie de gestion des zones côtières est déjà établie, et un plan d'établissement de neuf stations de traitement des eaux usées dans les villes côtières est déjà en cour de réalisation.

De sérieux efforts sont fournis pour la revision, la modernisation et l'accomplissement de la base législative et réglementaire dans le pays, qui permettra l'amélioration et le perfectionnement des activités de contrôle, d'inspection et de renforcer le respect et l'application effective des législations en vigueur.

Des travaux sont mis en application afin d'améliorer et simplifier les procédures du système de délivrance des permis pour les différentes activités économiques dans le sens de décentralisation, en respectant la nécessité de soumettre les projets à des études obligatoires d'impact sur l'environnement.

## 2. INFORMATIONS FONDAMENTALES SUR LES ACTIVITES

□ **A votre avis quelles sont les dix activités les plus importantes pour l'environnement des regions cotières de votre pays:**

Les activités industrielles, à importance environnementale majeure, situées dans la zone côtière, sont les suivantes:

**1- La production d'énergie:** les 4 grandes stations de production d'énergie électrique de Liban sont situées dans la zone côtière, et sont les suivantes:

- a- Centrale de Beddawi ( diesel/gaz)
- b- Centrale de Zouk Mechael ( fuel contenant 1% Soufre)
- c- Centrale de Jieh ( fuel contenant 2% Soufre)
- d- Centrale de Zahrani ( diesel/gaz)

- 2- **La production d'engrais:** Il existe une seule usine d'engrais phosphaté au Liban à Selaata ( Batroun).
- 3- **La production de ciment:** Il existe 4 usines importantes de ciment à Chekka.
- 4- **Raffinage du petrol:** Il existe au Liban 2 raffineries de petrol; mais elles ne fonctionnent pas depuis 1982. Cependant, Il existe beaucoup de reservoirs de stockage des produits petroliers dans la zone cotière.
- 5- **Industrie du tannage:** Il existe un nombre de petites industries de tannage à Daoura ( zone de Grand Beyrouth) et à Gazieh ( Saida).
- 6- **Industrie de teinture et du textile:** Il existe un nombre de petites unités à Daoura et Zouk Mesbeh ( zone de Grand Beyrouth ).
- 7- **Industrie chimique:** L'industrie chimique de base est limitée au Liban. Les branches les plus importantes sont les suivantes:
  - **L'industrie de Savons, parfums, detergents:** represente 18% de ce secteur.
  - **L'industrie de peinture, verniches et laques:** represente un bon nombre de petits " formulateurs " de peinture qui melangent des resines importés, pigments et emballages.
  - **Les produits de plastique:** est un important sub-secteur. Toutes les matières premières sont importées, sans production ou formulation de résines de plastique.
  - **La formulation et l'emballage des pesticides.**
- 8- **Industrie agro-alimentaire:** Cette activité concerne la production des conserves des légumes et des fruits, conféction des fruits, production de vin, extraction d'huile, distillation d'alcool.
- 9- **Industrie de métaux de base:** Traitement électrochimique de l'aluminium: chromage, stannage, etc...
- 10- **Industrie du papier:** est limitée à la production des papier, tissues et de carton à partir de pâte à papier importée et de recyclage.

□ **Quel est dans votre pays, le niveau d'utilisation des Meilleures Technologies Disponibles et des Thechnologies propres?**

Pendant les dernières quelques années, on constate une tendance à invéstire dans de nouvelle téchnologie, et on témoigne un mouvement actif de modérnisation dans certaines branches de l'industrie, en particulier: la production de ciment, l'industrie agro-alimentaire, l'industrie d'acide sulfurique etc... mais , on peut dire, que le niveau général d'utilisation des MTD et des TP est en **progrès**

□ **Quelle est votre opinion sur l'état de l'environnement de votre pays?**

L'étude effectuée il y a deux années, sur la détermination des "Points chauds" de pollution et des Zones sensibles, sur la côte libanaise, a démontré que la qualité des eaux marines dans la région centrale (zone de Grand Beyrouth), la région de Batroun (Nord) et de Gazieh (Sud) sont relativement les plus polluées. Cette pollution est due aux rejets des eaux usées sans traitement préalable et partiellement aux effluents industriels. Tandis que les autres parties de la côte libanaise sont relativement moins polluées, en constatant que la côte de Tyr (Sour) et de Biblos (Jbeil) sont les plus propres. Par conséquent, on peut dire que l'état de l'environnement basé sur la qualité des eaux marines est **Faible** dans les zones des points chauds (Grand Beyrouth, Batroun, Gazieh), et **Bonne** dans les zones sensibles (Biblos et Tyr).

Nous n'avons pas des données certaines sur la qualité des eaux continentales, mais le fait que Israël rejette régulièrement des déchets industriels dangereux et toxiques dans la pleine Mer, représente pour les pays de l'Est de la Méditerranée (Liban, Syrie, Chypre, et peut être la Turquie) une inquiétude sérieuse, compte tenu que le sens des courants majeurs est du Sud vers le Nord.

Il est sûr que dans certaines zones (Antelias, Bourj Hammoud) les habitats sont menacés par les travaux de reconstruction effectués dans l'eau de mer et directement sur la côte. Dans d'autres zones, les habitats sont probablement touchés par la pollution due aux rejets des eaux usées non traitées et localement aux effluents industriels. On peut dire que la protection des habitats est **Moyenne**.

□ **Est ce que l'on réalise régulièrement des contrôles de l'environnement pour:**

- La qualité des eaux marines: L'Institut des Sciences Marines à Batroun effectue des études sur la qualité des eaux marines, et réalise des programmes de surveillance continue et périodique. Dans le cadre du programme MEDPOL III, un mémorandum d'accord a été signé entre le Ministère de l'Environnement et le MAP. Pour les travaux exécutifs, un contract est signé entre le Ministère et le Centre National de Recherches Scientifiques.
- La qualité des eaux continentales: à raison d'insuffisance des moyens, le Liban ne participe pas activement dans les activités de contrôle régulier de la qualité des eaux
-



continentales, malgré l'existence d'un potentiel scientifique qualifié et important.

- Les eaux usées industrielles: Dans le cadre du Plan National de Gestion des déchets industriels, et dans le cadre du Programme National de surveillance continue ( MEDPOL Phase III), on a établi un programme de contrôle régulier des eaux usées industrielles, qui a débuté il y a quelques mois.
- Les déchets industriels: le même pour les déchets industriels.
- Le développement urbain: la plupart des aires au Liban sont de caractère rural, elles sont zonées en variété d'usage comme le tourisme, sport, agriculture, commerce, et activités industrielles. En plus, quelques aires sont zonées en réserves naturelles comme les forêts, les caves naturelles, rivières etc...

Le développement urbain est contrôlé par le Département d'Organisation Urbaine au sein du Ministère des Travaux Publiques.

- Le déversement des eaux usées domestiques: dans le cadre de planification et de préparation d'établissement d'un nombre de stations de traitement des eaux usées au long de la côte libanaise ( 9 stations) de capacités et de niveaux d'épuration différents, on contrôle périodiquement les déversements des eaux usées domestiques dans la mer. Une station à Gadir -au sud de Beyrouth (traitement primaire est déjà en fonction).
- Les déchets municipaux: On a établi une gestion des déchets municipaux basée sur la minimisation, séparation, recyclage et reusage, et enfin, le landfill sanitaire. Cette gestion est réalisée dans la zone de Grand Beyrouth et Mont-Liban, sa réalisation au niveau de tout le territoire libanais est en stades avancées.

**D'après vous quel est le niveau de sensibilisation du publique sur les problèmes de l'environnement?**

Grâce aux activités du Ministère de l'Environnement, des organisations non gouvernementales, et des médias, on observe un **haut** niveau de sensibilisation du publique sur les problèmes de l'environnement.

**Est ce que les groupes d'action environnementaux (ONG) influencent les décideurs de votre pays?**

Il existe au Liban un bon nombre de groupes d'action environnementaux ( plus que 100), en compétition positive, qui assure souvent d'importantes actions. En générale, l'influence des ONGs sur les décideurs est conditionnée et **parfois** est fructueuse.

**Je crois qu'une évolution des ONGs à base de la différenciation d'activité et de l'intégration d'action, assurera des meilleurs résultats, et augmentera l'importance de leur influence sur les décideurs.**

### 3- LEGISLATION

- Est-ce que vous disposez d'une loi cadre pour l'environnement?

Le projet-Loi, préparé par le Ministère de l'Environnement et concernant le Code de l'Environnement se discute toujours au Parlement. A la suite de son adoption, une série de Lois, de Directives et d'autres instruments législatifs lui seront ajoutés afin de contrôler plus efficacement et dans les moindres détails les différents aspects de la pollution.

- **Est-ce qu'il existe dans votre pays des lois ou des lignes directrices pour le contrôle de la qualité de l'environnement?**

Le Ministère de l'Environnement a adopté un Décret No 52/1 en septembre 1996 portant sur les normes et les limites admissibles de la pollution de l'air, des eaux et des sols. En effet, le Décret contient un nombre de " Normes de Qualité de l'Environnement" portant sur les décharges directes des eaux usées industrielles dans le milieu aquatique. Dans quelques semaines, une actualisation et perfectionnement de ce Décret va être adopté. Le Ministère a préparé une série de législations, applicables à tous les milieux aquatiques et traitant les limites de décharge directe dans l'eau. Il feront recours au Protocole de Protection de la Méditerranée contre la Pollution provenant des activités menées sur terre ( LBS Protocole ), ainsi qu'aux Normes de la Communauté Européenne et les valeurs guides de l'Organisation Mondiale de la Santé ( OMS ) et de la Ligue Arabe.

- -Nous avons préparé l'adoption des valeurs guides concernant la disposition des eaux usées industrielles et des eaux usées domestiques dans les différents milieux récepteurs, en faisant recours aux normes adoptés par le Comité pour combattre la pollution industrielle dans les pays arabes sous l'égide de la Ligue Arabe.  
-Nous sommes entrain de préparer un projet-Loi pour la gestion des déchets ( déchets solides urbains, déchets dangereux de sources variées etc..) , en faisant recours aux documents proposés par la Convention de Bâle sur le controle du mouvement transfrontier des déchets dangereux et leur disposition.  
-Dans le domaine de l'agriculture, le Décret du Ministère d'Agriculture détermine les pesticides interdits au Liban. Ce décret inscrit toutes les substances nommées polluants organiques persistantes, sujet de la future Convention de Stokholm sur les POPs.  
-Le département d'Organisation Urbaine au sein du Ministère des Travaux Publiques controle l'application des normes et des législations qui concernent le développement urbain.  
-Le Conceil de Développement et de Reconstruction avec le Ministère de l'Environnement controlent l'application des législations et des mesures à respecter dans le domaine de la disposition des déchets

domestiques et leur gestion complète, y compris le contrôle des "landfills", ainsi que la gestion des lixiviats et des gaz dégagés.

En général, nous pouvons dire que l'existence et l'application des législations est **incomplète**.

-Le projet-Loi du Code de l'Environnement, qui n'est pas encore adopté, prévoit l'obligation d'Etude d'Impact Environnemental (EIA) pour tous les projets. Actuellement, seulement les projets majeurs financés par des institutions internationales (Banque Mondiale etc...) sont soumis à une étude d'impact. Les autres projets doivent respecter et appliquer une série de conditions ayant comme objectif la protection de l'environnement, déterminées, dictées et contrôlées par le Ministère de l'Environnement.

-Partiellement, et dans des cas limités, on applique une étude de diagnostic de l'impact environnemental sur des sources existantes, afin de corriger leur situation pour but de protéger l'environnement, et pour atténuer leur effet néfaste sur l'environnement.

Récemment, on a préparé un projet Décret sur l'obligation de deux types d'étude d'impact: complète et simplifiée en dépendance de l'importance du projet.

-Suivant les législations en vigueur, les permis de nouveaux projets sont soumis à trois types de conditions:

- 1- Les conditions posées par le département d'Organisation Urbaine,
- 2- Les conditions posées par le Ministère de la Santé.
- 3- Les conditions posées par le Ministère de l'Environnement.

-Le renouvellement des permis temporaires est soumis aux mêmes types de conditions mentionnés.

-Le contrôle et l'inspection afin de vérifier l'application des conditions et le respect des recommandations est exécuté par:

- 1- Les inspecteurs du Gouvernement.
- 2- Les inspecteurs du Ministère de la Santé.
- 3- Les experts du Ministère de l'Environnement.

- Dans les cas d'inconformité et de violation des conditions et des recommandations, des mesures de punitions relatives peuvent être suggérées au Gouverneur, qui seul a le pouvoir à prendre la décision et à agir. Les mesures de punition peuvent dans certains cas provoquer la fermeture de l'entreprise.

## 4-Delivrance des permits

- **Est ce que dans votre pays existe un système de délivrance des permis:**

Il existe au Liban un système de délivrance des permis pour toutes les activités économiques; mais ce système nécessite d'être modernisé, dans le sens de simplification et de décentralisation. Un grand effort est fourni dans le sens d'établir un nouveau système de délivrance de permis, simple et efficace, en collaboration avec le Ministère de l'Industrie et l'Etablissement d'Encouragement de l'Investissement auprès la présidence du Conseil des Ministres.

Toutes les activités économiques, et en particulier celles de l'industrie, sont classifiées en trois catégories. La première catégorie regroupe les entreprises relativement lourdes, la deuxième catégorie regroupe les entreprises de taille moyenne et enfin la troisième catégorie regroupe les petites entreprises. Cette classification est ancienne et elle est basée sur des critères purement économiques ( nombre d'employés, investissement etc...). Des efforts sont fournis pour réviser la classification actuelle dans le sens d'établir une nouvelle classification basée sur un complexe de critères économiques et environnementaux et en particulier l'estimation de l'impact sur l'environnement et la santé publique. Cette nouvelle classification est déjà prête à être adopter.

En ce qui concerne la délivrance de permis, on distingue deux niveaux de procédures, l'une est plus simple et concerne les activités qui appartiennent à la troisième catégorie. Pour ce type d'entreprises, les autorités municipales et locales délivrent les permis; tandis que les activités de la première et la deuxième catégories vont suivre une procédure plus compliquée. Cette procédure est composée de trois étapes:

- 1- la première étape est déterminée par l'acceptation des autorités **municipaux et locaux**.
- 2- La deuxième étape est déterminée par la constatation du Ministère de la Santé, du Département d'Organisation Urbaine, et du Ministère de l'Environnement. La constatation de ces trois administrations est accompagnée de la liste des conditions qui doivent être respectées dans le cas où l'entreprise sera permise.
- 3- La troisième étape est déterminée par la délivrance du permis. C'est le Gouverneur **Régionale** qui délivre le permis en se basant sur les deux premières étapes; mais la Loi lui donne l'autorité de prendre la décision indépendamment des constatations mentionnées.

Cette procédure est valable pour les activités industrielles, et pour l'élevage. Pour le développement urbain, ce sont les autorités municipales et le département local d'organisation urbaine et le conseil suprême d'organisation urbaine qui prennent la décision et délivrent les permis. A ce niveau, les législations en vigueur ne nécessitent pas la constatation du Ministère de l'Environnement; mais pratiquement, les gouverneurs et les conseils municipaux consultent presque toujours l'opinion du Ministère de l'Environnement.

En ce qui concerne le déversement des eaux usées domestiques et l'élimination des déchets, la pratique actuelle ne nécessite aucun permis, malgré l'existence de très anciennes législations qui permettent aux autorités municipales et locales de délivrer des permis.

Les projets d'infrastructure sont décidés par les institutions gouvernementales ( les différents ministères ou bien le Conseil de Développement et de Reconstruction CDR), et par suite le permis est pris à ce niveau ( national).

L'effectivité réelle de ce système de délivrance des permis est très faible. Une série d'inconvénients peut être citée: la complexité de la procédure, puisque la délivrance dépend de plusieurs institutions différentes, où un grand nombre d'employés est engagé, fait qui explique la longue durée nécessaire à la délivrance d'un permis. Ces inconvénients vont être atténués avec le nouveau système qui a pratiquement commencé à agir.

Le projet-Loi qui concerne le Code de l'environnement, ainsi que le projet-Décret pour l'EIA prévoit l'obligation d'une étude d'impact de l'environnement pour les nouveaux projets et pour les projets existants ayant des problèmes de pollution.

Compte tenu les problèmes environnementaux au Liban, et le niveau relativement élevé de sensibilisation du publique sur ces problèmes d'une part, et l'esprit démocratique général dans le pays d'autre part, le publique et les organisations non-gouvernementales ont accès à l'information concernant les problèmes de l'environnement, y compris l'état de l'environnement, les eaux usées industrielle, les déchets solides , les émissions dans l'atmosphère et les conditions de permission.

## **5-Respect et maintien des engagements relatifs à l'environnement:**

La mise en conformité des engagements relatifs à l'environnement est prise en considération au Liban.

Les administrations engagées dans le processus de délivrance des permis sont responsables de contrôler le respect des conditions mises en oeuvre. Ces administrations sont: les autorités municipales, les inspecteurs sanitaires, les agents de l'organisation urbaine, et les experts du Ministère de l'Environnement.

Les installations industrielles sont contrôlées et inspectées avant le commencement de la production afin de vérifier l'exécution et le respect des conditions et des recommandations demandées.

Les inspections à la suite de plaintes sont parfois effectuées. Des difficultés liées au nombre limité d'experts et d'ingénieurs au sein du Ministère de l'Environnement, limite le contrôle régulier et périodique, qui doit être effectué sur les différentes activités à la suite de plaintes. Les réformes législatives et administratives effectuées au niveau du Ministère de l'Environnement, dans le sens de multiplier les capacités humaines et instrumentales, et au niveau législatif, augmenteront les possibilités réelles d'effectuer les activités de contrôle et d'inspection nécessaires.

Actuellement, un tel contrôle est réellement possible seulement de temps en temps et touche quelques types d'activités qui sont distinguées d'un impact important sur l'environnement.

On peut résumer, des actions systématiques de contrôle et d'inspection sont possibles, en plus que les actions de contrôle qui sont une réponse administrative à des réclamations et des cas d'urgence.

Malgré l'irrégularité du contrôle effectué, on prend, dans les cas de manque de respect des règlements, des décisions de fermeture temporaire ou permanente.

Un système régulier et suivi en faveur de l'étude de l'état de l'environnement consacré à la qualité de l'eau, à la protection de l'habitat et aux émanations industrielles n'existe pas encore au Liban. Des études sont faites au niveau de différentes institutions, mais un système harmonisé et régulier pour les actions de contrôle et de surveillance continue, est en étape de préparation.

**LIBYA**

## Introduction

Great Jamahiriya is a wide country with area of 1.76 million km<sup>2</sup> , bordered from the North by the Mediterranean sea with coast length of 1.750 km . It is bordered from East by Egypt , and from South by Sudan , Tschad and Niger and from West by Algeria and Tunisia as illustrated in figure (1) .

Population and Agricultural Wealth areas are located in two coastal districts extending from western Misurata and from Ajdabia District to the eastern borders .

This coastal strip leads to series of grades of which height reaches 600 mts in Aljabel Al-Akhdar District .

As with respect to climate in the coastal areas , the winter season is generally known to be moderate , namely the rate of maximum temperature is ranging from 13-14 °C as the climate of the coastal strip is classified as xerice moisture region as per international classification .

As with respect to population number , it was estimated at 5.9 million persons according to 1996 census .

On the other hand , the Economy of Great Jamahiriya is characterized by being based on the oil returns where it represents 65 % of the total domestic product and the remainder is subdivided in trade , agriculture , industry and foreign investment .

Putting into consideration the distinctive geographical location of Jamahiriya in the mid-north part of the Africa continent it was enabled to participate in all environment programs where on the level of Africa it takes part with Mediterranean Afro-Arab regional activities in addition to follow-up of participation in all international conventions and agreements such as the following :-

- Convention on the protection of the Mediterranean sea against pollution and it's relevant protocols.
- Follow-up and participation in the works of the Governing Council for United nations Environment programs .
- Executive Council for Arab ministers in charge of Environment .
- Follow-up of works of African Ministerial conference AMCEN Council of ministers for environment affairs
- Vienna convention and the protocol Montreal for protection of ozone layer.
- Protocol on the prevention of Pollution of the Mediterranean sea by Transboundary movements of hazardous wastes and their Disposal.
- Basel Convention.

Springing out from this principle , environment protection laws were passed to restrict pollution by co-ordination with both local and international parties



### **Legislation :-**

Jamahiriya gave great concern to environment matters and that was reflected in its effective participation in global activities which were formally embodied in Stockholm at the UN - Conference for human environment in 1972 where it effectively took part in this conference and subsequently it adopted several laws and resolutions concerning environment protection crowned by adopting law No.(7) for the year 1982 on environment protection and Resolution of the General People's Committee No.(912) for the year 1984 on establishing the technical center for Environment protection , and Resolution of the General People's Committee No.(263) for the year 1999 on establishing the Environment General Authority " E.G.A." . Jamahiriya's was also assigned to supervise the management of matters having to do with environment control and procedures of pollution fighting in all aspects .

The foundation of the Environment General Authority is considered as a victory and support for fields of environment protection affiliated to the General People's Committee which is the highest executive body in Jamahiriya and that inevitably facilitates the execution of tasks for environment protection such as co-operation with international authorities for elimination of pollution and follow-up of international conventions and agreement in the environment field and benefit therefrom and follow-up of scientific and technological development in the field of environment protection .

### **The most important laws adopted having relation with Environment protection are :**

- Law No. (106) for the year 1973 the law of health which is concerned with the of environment at health impact including food pollution , insects control and disease vectors .
- Law No.(13) regarding the public cleaning and that to be carried out by People's Committees for municipalities of which most important provisions such as :
- **Individuals , Authorities , Corporations and Companies are prohibited to do the following : -**
- Disposal of waste or discarding the same in locations other than those designated for the same .
- Disposal of waste and debris and remains of chemical materials in front of houses and buildings and in sea coasts , forests and public parks and non-burning of the same in order to get rid of them .
- Drainage of waste water is to be strictly forbidden as well as other fluids from population buildings or other corporations in street , roads , yards and lands .
- The Authorities of public cleaning are assigned to conduct supervision upon sewerage networks , treatment plants and organic fertilizers plants .
- Binding all industrial and chemical organizations as well as hospitals and research centers and others which may produce toxic , radiative or health

harmful waste to collect such waste and dispose the same by suitable technical process .

That is to say such law is concerned with the process of public cleaning and supervision on sanitary drainage process and treatment plants putting into account that the secretariat of Utilities is a service more than control sector .

**- Law No.(8) for the year 1973 on preventing the marine Environmental protection pollution with oil**

It is concerned with implementing the provisions of international conventions to prevent the pollution of sea water with oil issued in London "54 " amended in 1962 of which most important provisions are :-

- Implementation of penalties on ships violating to this treaty .
- Penalties concerning oil records or preventing the competent authorities such as ship inspection .
- Penalties resulting from throwing oil or any leakage due to casual incident and in case the shipmaster does not inform the authorities of ports by a report about such accident in the regional waters .
- Procedures regarding reception of waste and oil mixtures desired to be disposed of such as preparation of ports with suitable facilities to receive such waste .
- The prohibition of danger of oil or oil mixture casting in the Libyan regional waters shall apply .
- Determination of ship supply positions which carry the Libyan nationality with oil separation devices in accordance with technical designs and conditions .
- Specialties in separation of crimes which occur in violation to the provisions of this law .
- Authorization of judicial control officials to conduct the missions of maritime inspection .
- The General Ports Corporation shall undertake the risks of the relevant country of the ship for violation occurrences as it will also be concerned with reports and notifications in foreign authorities for violation occur outside Libya for this treaty .

**The most important local Resolutions concerning Maritime pollution :**

- Resolution of Revolution Command Council on approval to join the international convention to prevent sea water pollution with oil 54 amendments thereof 1962 .
- Resolution of Revolution Command Council on approval to join the agreement of preventing maritime pollution due to casting of debris and others .
- Resolution of Revolution Command Council on approval to join the co-operation agreement to fight Mediterranean water pollution with oil.

From above-mentioned laws and resolutions we observe that most of these legislation are specialized in a certain sector to serve environment protection to this sector until the issue of law No. (7) for the year 1982 which constitutes the

conclusion of the previous laws where it aims at protection of the surrounding in which man and all alive organs live including water , soil , air and food against pollution with finding the suitable process and ways to measure the magnitude of pollution .

This law has bound all Secretariat , municipalities , corporations , public and private companies and both national and foreign institutions , which may practice whatever activity result in environment pollution , to comply will all activities and procedures stipulated in this law and Executive regulation thereof and all other laws relating to environment .

- **Law No. (7) for the year 1982 on Environment Protection to be carried out by the E.G.A , of which specialties are :-**

- Proposal of plans and programs regarding environment and supervision upon application and execution follow-up .
- Supervision upon environment correcting .
- Adaptation to scientific and technological development in the field of environment protection .
- Co-operation with international authorities to eliminate the reasons of pollution .
- Organizing enlightenment campaigns with different means for environment identification .
- Provision of permits necessary for practicing the activities which may result in pollution .
- Expressing opinion on the environmental effect for projects where pollution may result therefrom .
- Organizing seminars and training and scientific courses.
- Review all legislation relating to environment including proposals and executive regulations of the law .

### **Permits :-**

E.G.A. undertakes the supervision on environment protection and implementation of all environmental conditions in addition to provision of permits to all respective authorities which practice activities where environment protection may result therefrom in accordance with the form , regulations and conditions in force .

Article (6) of the executive regulation stipulates that every person , ordinary or Juridical , national citizen or foreigner , who practices any activity which may result in environment pollution shall not practice such activity before obtaining a permission from E.G.A and Article (7) of the executive regulation stipulated that all authorities shall observe the environmental considerations at setting the plans of different projects including projects of housing , utilities , transportation , energy , industry , agriculture and others through the following : -

- E.G.A. shall study the environmental effect for such projects via a competent specialized committee and express observations to secure the implementation of environmental conditions .
- Participation in setting the environmental and standard specifications for many projects and corporations .
- Technical supervision and binding on implementing the environmental conditions to disposal of solid and liquid waste .
- Binding the factories from which pollutants dash out to comply with the approved scientific standards .
- Binding all authorities to obtain permission from the competent authorities supervising them prior to erection of any plant or corporation uses sea water on the coast or cast any waste or blast any blasting for purposes necessitated by work significance .
- Expressing any observations and providing permits on importation and manufacture , transportation and usage of all insecticides and chemicals and other materials to secure non-pollution of the environment .
- Endorsement of proposals of environment correcting programs .
- Providing permissions to register the national societies founded with objective of environment protection .
- Providing permissions on how to cast and disposal of solid and liquid materials .
- Providing permissions on importing exhaustive gases of ozone layer.

Within the framework of voluntary “ compliance “ control and after passing the law No.(7) and other relevant laws in relation to pollution restriction , consciousness became adequate as with respect to pollution risks and resulting damages . Through information programs indication was made to the significance of implementing the laws and binding the factories to apply the environmental conditions as E.G.A. also conducts surveys and sudden field visits to industrial areas and firms which may lead to pollution and assess them with voluntarily binding them to commit to respect the usage of the best possible technology for the possibility to eliminate the pollution at its source .

In the shade of expenditures rates proposed on industry , it is expected that the industrial production constitutes a increase of 8 % of the gross domestic product in 2000 compared with 5.2 % in 1985 . The industrial growth will be accompanied by a similar growth in energy consumption especially electricity and rise in pollution rates . For such reasons the environmental conditions were applied and the environmental studies started such as :-

- Libyan Environmental perspective (2000 – 2025) .
- Features of the Libyan Environmental position “ 94/95 “
- Study and assessment of Libyan soil
- Study and assessment of forest situation in Tripoli District .
- Study and evaluation of atmosphere pollution in Khalij Serte Municipality .
- Periodical Control and monitoring on the quality of fresh water and sewerage treatment plants .

- Control and monitoring of shores by taking samples from the sea water and conduct analysis and restricting the pollution places .

These studies focused on evaluating the environmental position inside Libya and the possibility of participation of all sectors to lessen the effects of pollution considering the environment protection is the responsibility of all and warning through correspondence to restrict the enlargement of the environmental problem .

### **Encouragement of voluntary actions to meet the environmental Requirements :**

After adoption of the law No. (7) for the year 82 and establishment of Environmental General Authority "E.G.A.", the Bureau of enlightenment and environmental information was assigned to follow-up the National activity program and the national societies and that helped much in activities relating to environment such as participation with the Libyan Red crescent society in organizing more symposiums to identify the environment as well as the field campaign for guidance in using water and preserve the environment and waste disposal .

This is in addition to participation with the General Scout and Conductors E.G.A deliver lectures in scout forums to identify environment and participate in cleaning campaigns and guide water usage and the possibility to disposal of expiry dates of medicaments .

By issue and approval of the organizational chart for " E.G.A" the National Activity Bureau was assigned to conduct the information activity to be specialized in the follow-up the contributions of the National Societies in environment protection to laise their awareness for the risks of pollution and make the citizens and concerned authorities feel the problems of pollution in addition to organization of scientific symposiums and conferences to make known the national efforts in this field and issue of periodicals , printed matters and posters plus bulletins as will as using all media aiming at environment protection . Encouraging people to conduct voluntary deeds and the most important societies which conduct voluntary works in favor of environment are the following : -

- General Scout and Conductors Board .
- Libyan Red Crescent .
- National Society for keeping the land alive organisms .
- Environment Friends and Heritage Society
- Science and Technology Society .
- Al-Hana Charitable Society .
- National Society for Environment Friends
- Tree Friends Society .

### **In the field of applying the laws :**

By passing the executive regulation for the law No.(7) and providing the status of judicial control for personnel in the field of environment protection the application of the regulation has become a task to meet the environmental

procedures including the criminal and administrative penalties by co-ordination with relevant authorities .

Article (123) of the executive regulation stipulated that the judicial control officials including security officials , custom guard and municipal guard to undertake the following .

- Notifying their authorities of any violation to the provisions of the law No.(7) and executive regulation thereof and those authorities shall undertake the necessary procedures including the notification of the “ E.G.A. “ in this respect .
- Undertaking the powers included in the criminal procedures law at revealing the crimes committed against environment protection .
- Violators may be penalized by imprisonment ranging from one month to one year and financial fines ranging from L.D.50 to L.D. 10.000 according to the estimated violation without prejudice to the penalties prescribed by the penal law and Economic crimes law saving the right of the court in all cases to confiscate the tools of above violations whenever necessary .
- Supporting of the People’s Conferences all over Great Jamahiriya to “E.G.A” to practice its specialties assigned thereto .

As a result of implementing the laws and regulations relating to environment and resulting effects is to follow the directives of “ E.G.A” and its recommendations by all authorities and observing the implementation of environmental laws and conditions in addition to the finding of the periodical and field surveys for many factories and warning for environmental violations which will enable the restriction of pollution process as a result of the periodical evaluation .

**The most important characteristic features of implementing the environmental laws are : -**

- Trials to avoid waste casting in inconvenient places and non-burning of the same plus participation in evaluating and preparing a plan to disposal of waste .
- Non-discarding of industrial waste and waste directly in the environment.
- Result for the periodical evaluation for treatment plants and ensuring their importance to avoid pollution which will lead to establishment of new plants and upgrade the old ones .
- Binding the factories to install chimney filters and installation of treatment and subsidence plants before debris drainage.
- Binding Brega oil Marketing Company inside Libya to lessen the use of lead in gasoline to reach lead free with importance of compliance to collect the lubrication oils and engine lubricants from all plants and non-casting of the same in the soil or sewerage networks.
- Urging to increase the efficiency of water laboratory and treatment plants operation .
- As a result of studying the environmental effect to execution , some industrial projects were suspended for their causing damage to environment

or conducting some conditional environmental amendments such as “ cement plants , leather tannery and metal melting plants “.

- Issue of resolution to form a Committee to prepare a plan project to confront environmental emergency cases .
- According to what has been assigned to the “ E.G.A” such as granting release permits and control and organization of the sale of chemicals and insecticides plus control the effects on environment where control started since 1987 , it was possible to build a data base in many sectors and the materials that are hazardous to environment were controlled by not applying them or warning for their risks and frequently binding the suppliers to supply alternatives and implement the objectives of Barcelona center “ clean production “.
- Forming a Committee to conduct the registration of insecticides and set a program for the Libyan requirements of insecticides to avoid the accumulation of insecticides and their expiry dates and what may result from such as discarding problems :-
  - Prevention , non-treatment and non-registration of insecticides and chemicals for the following reasons :-
  - Pesticides that are internationally prohibited .
  - Pesticides that are misused in Libya .
  - Pesticides and chemicals that are not complying with the local specifications.
  - Pesticides having residuals surpassing the allowed limits .
  - Toxic chemicals listed under the name of “Dirty 12 “ were used with full care .
  - Chemicals were used with full care according to international convention and agreements concluded with Libya .
  - Chemicals were used with full care as a result of the studies of the international organizations preserving environments .
  - Co-operation with oil companies in the process of oil pollution fighting via organization of training courses on gradual basis by the participation of this sector and preparation of national plans to confront this pollution .
  - Decrease the importation exhaustive gases of ozone layer
  - Co-operation with maritime inspection department following to secretariat of transportation and communication .
  - Preparation of studies concerning the establishment of land and marine protectorate .

All the above-mentioned positive aspects and as a result of implementing the laws , regulations and annual assessment of labor for actions of “E.G.A “ , the officials in charge were warned of the significance of environment protection to upgrade the efficiency of control and inspection styles were a new management were created in the organizational chart for “ E.G.A.” denominated as “ inspection and Environment control Department .

This department is involved in control and follow-up of all public and private institutions , Secretariat , sectors and companies to guarantee the creation of a

pollution free environment and it shall then have liaison with relevant authorities both locally and abroad and co-ordination with competent offices and managements to undertake the procedures and set the conditions and suitable scientific methods and conditions to restrict pollution including conduct of surveys , analogy and assessment .

**Inspection and Environmental Control Department :**

It practice its specialties through the following sections :-

**1- Waste control section :**

- Control over ways and process of waste disposal and proposal of efficient scientific solutions .
- Control over industrial waste and bind the concerned authorities for disposal and discarding via scientific method .
- Control and follow-up of toxic and dangerous waste .

**2- Oil and Industrial Pollution Control Section : -**

- Control over oil pollution resulting from different activities of oil such as oil exploration , production and manufacture plus transport of oil and derivatives .
- Control and follow-up of oil and industrial plants to realize commitment to make available devices and equipment applied to restrict the emission of pollutants
- Proposal of methods and process necessary to guarantee the continuity of control over the oil institution to follow-up the execution of the “E.G.A’s “ conditions in relations to the environment protection.
- Co-ordination with the national competent authorities to set a control plan for various oil and industrial sources and contribution in preparing an emergency plan to confront pollution .

**3- Air Pollution Control Section :**

- Determination and Control of different sources of air pollution .
- Control over the different resources of energy production and proposal of methods and process to restrict air pollution resulting therefrom and proposal of usage of other clean alternatives .
- Proposal of necessary programs to create control systems in highly populated areas in practicing activities leading to pollution .
- Follow-up of public and private sectors in carrying out the necessary environmental conditions for purity of air and conformity to the standards regarding the air good quality .
- Participation in evaluation the environmental impact for projects .
- Control over public and private sectors to observe and comply with the gradual disposal of using the ozone layer exhaustive materials .

**4- Water Contamination control section :**

- Control over the quality of fresh water .
- Control over sanitary drainage water treatment plants regarding the efficiency of operation .
- Contribution in preparing the standards and specifications of the liquid waste .



- Control and follow-up of different industrial activities relating to water uses and ways of disposal of industrial liquid waste .
- Contribution in study and assessment of environmental effects of the projects .

#### **5- Soil Pollution Section :**

- Control over concentration of soil damaging metal elements .
- Control of environmental balance for agricultural soil by control over usage of chemical fertilizers and organic fertilizers in the different agricultural purposes .
- Control the dealing and use of toxic insecticides in “ green house “ and their organization as well as proposal of suitable alternatives .
- Control of exploitation of agricultural lands and their protection against deterioration and urban expansion .
- Control over forests and parks and space areas to prevent their use as discarding areas of all kinds of waste .
- Follow-up of studies , researches and international conventions to get use of them in soil pollution control and specialty for fertilizers and agricultural insecticides .

#### **6- Seas and Shores Pollution Control Section :-**

- Control over shores to prevent the disposal of solid and liquid waste .
- Control over institutions , laboratories , factories , power generation stations to commit to carry out the necessary conditions to secure non-drainage of their remains to the sea before being treated and to secure the compliance with the relative standards and specifications .
- Control over shores and Libyan regional waters to prevent ships from discarding the toxic and hazardous waste and ballast water .
- Control and inspection of ports of loading and discharge prepared to receive the ships and their reform basins to guarantee the availability of necessary equipment to receive the polluted sanitary water and water of waste , remains , oil waste and other pollutants .

#### **7- Environmental Inspection Section :-**

- Inspection of Public and private institutions to verify the execution of environmental conditions relating to health and safety of environment .
- Selection of samples to the laboratory to estimate the pollution level and propose the instructions concerning the procedures of pollution restriction .
- Compiling information and data relating to estimation of pollution level and see the technical documentation and reports .
- Undertaking the legal procedures against violators in accordance with legislation in force .
- Inspection of professional safety equipment , as regard to their lifetime and availability .
- Participation in programs and information campaigns for enlightenment in the field of environment protection .

The Environmental Inspection department consists of the following units :-

- Municipal Inspection Unit .
- Health Inspection Unit .
- Maritime and oil Inspection Unit .
- Industrial Inspection Unit .
- Natural resources Inspection Unit .

This department conducts missions of inspection over different handicraft , service and productive institutions and departments and other sectors by co-ordination with managements and offices of the Board such as follows :-

- Daily and weekly routine inspection .
- Periodical inspection .
- Inspection based on an environmental or health case according to complaints received by managements and offices of the Board either raised by individuals or corporations .

The inspection process is conducted according to a specific mechanism such as assigning the Unit to conduct inspection operations to control the violators and inspection mechanism will be conducted according to the following arrangements :-

- Form (A) : Assignment to inspect a corporation  
 (B) : Report of environmental inspection on a given activity .  
 (C) : Calling request.  
 (D) : Violation Report .

### **References:**

- Annual reports for T.C.E.P.
- Encyclopedia of marine legislation.
- Law No. 7 and Executive regulation.
- Law No. 13 for public cleaning.
- Tourism master plan.

**MALTA**

# CHAPTER 1

## INTRODUCTION: BRIEF OVERVIEW OF THE MALTESE ISLANDS

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### 1.1 Geography and demography

The Maltese Islands are located in the middle of the Mediterranean Sea on latitudes 35 48'28" to 36 05'00"N and longitudes 14 11'04" to 14 34'00"E. The Maltese Islands are a group of islands of a total land area of approximately 316km<sup>2</sup>, a 190km long coastline and a resident population of around 390,000, making them one of the smallest countries in the world with one of the highest population densities.

The exploitation of land and sea has occurred over the last 7000 BP since Man has colonized these islands for a variety of uses ranging from hunting and agricultural activity to industrial development to spiritual and recreational activities. This has resulted in significant changes to landscape in order to satisfy the existing and emerging needs of the population. Over the last 30 years, urban sprawl has increased to occupy from 5 to 16%, leaving 38% of the area for agriculture.

Tourism is considered to be a key sector in the economic development of the Maltese islands, with over 1.1 million tourists visiting these islands annually over the last decade. Although tourism activity has contributed a lot to Malta's economic and social development, the unplanned development of tourism facilities has led to considerable damage to, and degradation of, the physical, natural and social environment with landscape degradation, habitat destruction and pollution. Tourism development has been heavily concentrated in specific localities and, although the pattern of tourist arrivals has spread into the shoulder months, nonetheless tourist arrivals still peak during the summer months. About 94% of tourism related development is concentrated in coastal areas and some developments have facilities occupying stretched or foreshore in terms of hotel development and beach concessions.

### 1.2 Climate

The Maltese Islands are characterised by a typical Mediterranean climate with a dry season (April to September) alternating with a wet season (October to March). Rainfall is highly variable from year to year, with an average annual precipitation of 529.6mm. Temperatures vary from an average of 44 C in summer to about 9 C in winter (daytime).

### 1.3 Geology and geomorphology

The Maltese Islands are composed almost entirely of marine sedimentary rocks deposited over millions of years during the Oligo-Miocene Period, consisting mainly of limestone and clays forming a series of stratigraphic layers of varying compositions and resistance to erosion. In a few localised areas, these tertiary rocks are overlain by sparse quaternary terrestrial and raised beach deposits, of palaeontological importance. The exposed rock sequence has been classified in order of superimposition as:

- Upper Coralline Limestone
- Greensand
- Blue Clay
- Globigerina Limestone
- Lower Coralline Limestone

The geomorphology of these islands is largely determined by tectonics, drainage, dolines and drowned valleys. The islands have an undulation towards the North-East and the coastline are mainly a gently sloping shore to the North and North-East sides and steep cliffs on the West and South-Western sides of the islands.

Faulting resulted in the formation of broad valleys which slope gradually to sea level, forming relatively broad sandy bays (Mellieha Bay) and saline marshlands (Salina). Erosion is another major factor affecting geomorphology, which results in the formation of wave cut notches and platforms, bays of fast eroding clays and marls, with boulder screes at the foot of the coastlines, karstland, etc.

The interaction of geomorphological features and aquatic habitats to create assemblages gives rise to sea scapes of which there are two types - those found in areas with a hard bottom type and those occurring in areas with a soft bottom type. These are characterized as biotopes in terms of the major geophysical, topographical and biotic features.

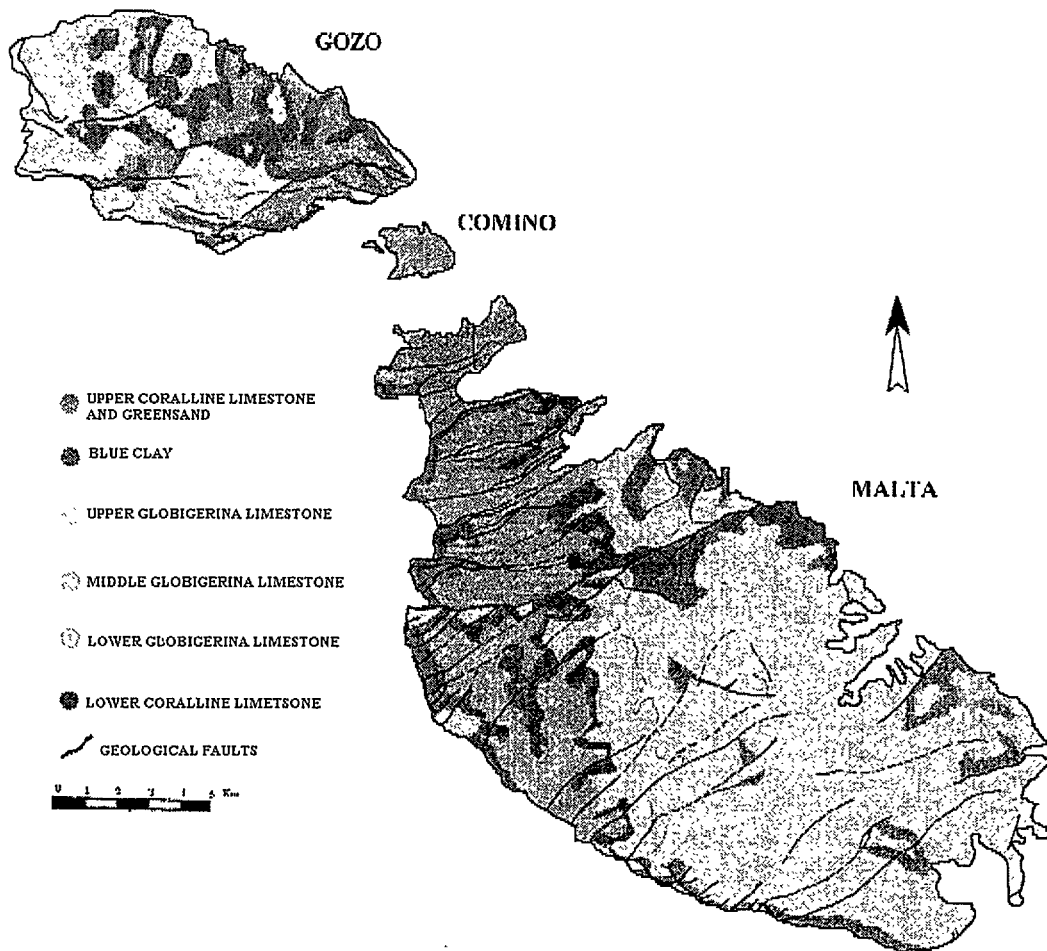


Figure 1: Geological map of the Maltese Islands (Schembri & Anderson, 19 )

#### 1.4 The coastal and marine environment in the Maltese Islands

The Maltese Islands have a 190km coastline of highly varied topography, geology, numerous sites of significant ecological important such as cliffs, sand dunes, salt marshes, and coastal clay slopes, as well as rich and diverse wildlife. Most of urban development is concentrated around the coast with the result that over the last 40 years, there has been a progressive loss of natural coastal habitats. Hence, the coastal zone is being exploited by multi-users including touristic establishments, sport amenities, fish farming, desalination plants, urbanization and others.

Anderson and Schembri (1989) concluded that 38% of the Maltese coastline and 73% of Gozo's coastline are inaccessible due to physical features, 84% of the accessible coastline in Malta and 74% of the accessible Gozitan coastline are dominated by tourist development. This has increased over the last decade in Malta.

Intense human activities have exerted great pressures on our coastal resources. Alteration in coastal features has resulted in loss of certain habitats such as sand dunes and saline marshlands. Some coastal quarries have broken completely through coastal cliffs and are degrading and altering the natural coastal features present.

Over the last decades, Malta has undergone rapid changes in demographic, socio-economic and ecological terms. As a Small Island Developing State, it has a limited and fragile ecological resource base and consequently we can ill-afford errors in resource utilisation and management. Recent infrastructural development has resulted in our coastal environment being threatened by a number of hazards, including marine contamination.

Malta's potential for future economic growth and social development will ultimately depend on the extent to which coastal and marine environment problems are successfully controlled. Problems of marine environmental degradation are symptomatic of mismanagement and may be successfully tackled only via proper resource management to control marine contamination hazards and risks.

Most infrastructural activities in Malta are concentrated around the coast in order to facilitate the importation of raw materials and export the final product. Some industries require cooling water or need receiving waters for wastes created in the industrial process, e.g. desalination plants, power generating plants.

Most maritime activities are located around the port-city conurbation of the three major harbours especially related to energy production and cargo handling. Some activities require a coastal location for the needs of their operations including transport, desalination, port activities, whereas other activities benefit from a coastal location for different reasons, including aesthetics. Factors leading to conflicts among coastal activities are mainly relating to :

- Competition for space (land and sea surface)
- Degradation and eradication of land and benthic habitats
- Degradation of water quality

***Coastal activities can be classified as follows:***

Mainland Malta: 8.0% of total coastline comprising: 71.0% (maritime, manufacture, etc.)  
25.0% salt production  
2.0% desalination plants  
2.0% quarrying

Gozo and Comino: 4.5% of total coastline comprising: 8.8% salt production  
12.0% quarrying

# CHAPTER 2

## THE COASTAL ZONE AND RELATED ACTIVITIES

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### 2.1 Energy production

There are two power generating plants in Malta, one in Marsa (Grand Harbour) and a newer one in Marsaxlokk Bay on the South-East coast of Malta. Both plants have been utilising heavy fuel oil since 1992, following phasing out of the use of coal from the older plant in Marsa. Hence, coal dust is no longer accumulation in the sediments of Menqa Creek. Between them, these plants utilise about 700,000 MT of heavy oil and 50,000 MT of gas oil.

Marsaxlokk Bay also houses the storage of petroleum products including gas oil, unleaded gasoline, jet A1, kerosene, light fuel oil and fuel oil, with a total annual consumption approximating 1 million metric tonnes. Oil and heavy fuel oil are also handled in Grand Harbour for the supply of Marsa power station and for storage. Various discharge points are therefore present in both harbours with the risk of spillages being the cause of severe harm to marine life especially from substances with a high percentage of metals and asphaltenes sodium hydroxide and sodium triphosphate used to keep a high pH and thus avoid corrosion, are two of the contaminants finding their way into the marine environment following discharge.

Other contaminants include chlorine which is added to the sea water taken in. This chlorine is utilised to prevent the growth of organisms and when discharged with waste water may also adversely affect the marine environment. Thermal pollution is another consequence of these installations from the discharge of waste water from the cooling towers. Studies over the years at the University of Malta have indicated that a rise of 4°C in seawater temperature of the receiving waters will cause deleterious effects in the long term.

The industrial sector dealing with fossil fuels is an important factor determining the national economy. Malta imports all its fossil fuel requirements, which may amount to a global volume in excess of 1,000,000 metric tones per year. In 1999, Enemalta's Petroleum Division imported 900,000 metric tones of petroleum products, 55% of which were fuel oil.

Risks of oil pollution to our marine and coastal environment may arise from:

- Major or moderate accidents involving maritime traffic, including bunkering;
- Moderate to minor incidents of spills resulting from inshore or land-based activities;
- Illegal discharges of ballast waters by maritime traffic;
- Operational and minor losses of fuel and diesel oils from small water craft.
- Land-Based Storage and operations dealing with fossil fuels.

Fortunately, no major oil spill has as yet been reported to occur in Maltese territorial waters which could lead to massive stranding of oil on our shores. However, the Central Mediterranean is an area with relatively high maritime traffic and the associated risks of incidents are evidently high.

Bunkers are delivered off-shore inside Maltese territorial waters at 5 locations (Figure 2). These include cargo ships, tankers, passenger liners, yachts, catamarans etc. Vessels carrying petroleum products, in a non gas-free condition, are bunkered 12 miles offshore at Hurd's Bank. The total quantities of oil bunkered in Malta on an annual bases is approximately 400,000 metric tonnes, of which 65% is undertaken offshore. To date, only minor incidents have occurred during bunkering, and these have not resulted in the release of oil.

Minor to moderate oil spills have been reported in inshore waters, resulting mostly from land-based operations such as oil storage, or fuel landings. Most fossil fuels are handled within Marsaxlokk and Grand Harbour, where all fuel terminals are located. Operational losses of fuel oils from small water craft, may also constitute a significant and chronic input of oil into the marine environment. This is mostly related to intense boating activities during the summer months.

The available data indicate that to date, while the risks of massive spills are ever present, it is the chronic low level type of pollution which is most significant. In fact, a significant increase in the levels of oil pollution in superficial sediments from several coastal areas has been identified. Within the Grand Harbour, PHC levels increased from 5 to 12 times over a period of five years.

Development of yacht marinas in Marsamxett may have led to a five-fold increase in oil pollution load in the sediments in Pieta and Msida over this same period. Different analytical methods have indicated that the areas which are mostly exposed to the higher levels of oil pollution are located within Grand Harbour, Marsamxett and Marsaxlokk.

## 2.2 Water production

Ground water is scarce in Malta and the refushing of the perched aquifer, used for irrigation, is largely dependent on the amount of precipitation during the wet season, which is highly various and very unpredictable. 47% of annual drinking water demand is supplied from ground water (MSL aquifer) exploitation through pumping stations, bore holes and springs. The remaining is supplied by four desalination plants situated on the coast at Ghar Lapsi, Cirkewwa, Pembroke and Marsa.

The major impacts from the plants onto the coastal marine environment result mainly from the discharge of water with high salinity and from the presence of washing chemicals and disinfectants utilised for the periodical flushing and treatment of the membrane. Such chemicals include citric acid, ammonia and formaldehyde.

**Table 2.1 Reverse osmosis plant statistics**

Map No.	1	2	3	4
R.O. Plant	<b>Ghar Lapsi</b>	<b>Marsa</b>	<b>Pembroke</b>	<b>Cirkewwa</b>
Desalination (m <sup>3</sup> )	6,184,000	1,197,000	13,349,000	3,744,000
Desalination (%)	25.2	4.9	54.5	15.3
Citric Acid (kg)	300	250	800	650
Ammonia (kg)	140	130	400	260
Formaldehyde (kg)	550	450	1450	1200
Washing Powder (kg)	75	70	183	144
Brine Flow (m <sup>3</sup> /day)	80,000	5,500	40,000	130,000

The operation of the plants is susceptible to contamination by sewage pollution. Very often the operation of the Marsa R.O. plant has been regularly interrupted for long periods of time due to contamination by sewage of the water boreholes.

## 2.3 Maritime activities

Maritime activities are mainly concentrated around the three major ports in Malta (Grand Harbour, Marsamxett Harbour and Marsaxlokk Bay) and in Mgarr Harbour in Gozo. Activities include ship building and repairing, cargo handling, bunkering, yacht marinas, passenger transport, tank cleaning and deballasting, as well as storage of fuels, cement and others.

The Grand Harbour which is the main harbour as regards transshipment and the maritime industry, has a 1.54km coastline and a population density of 14,500 inhabitants/km<sup>2</sup> is concentrated around it. It is well equipped with berthing facilities for cargo handling and passengers, and docks for ship maintenance and repairing. Such high frequency of traffic inevitably contribute to the nutrient load. Oil slicks are frequently observed. The numerous creeks, together with the wave breakers at the mouth of the harbour, attribute a great degree of shelter to the harbour, but on the other hand, there is a restriction of current and circulation necessary to disperse the pollutants from the various sources.

The number of vessels arriving in our ports has increased drastically since the establishment of the Freeport and the liberalisation of bunkering operations. The Malta Maritime Authority is consequently intensifying its control and monitoring of cargo handling in order to enhance safety and security port areas.

Oil pollution sources are mainly the deliberate dumping or accidental release from passing ships, operational discharge and tank cleaning operations. The tank cleaning farm caters for oily wastes from ships undergoing repair. Other waste such as bilge oils, are handled by an oil-processing facility. The separated water ballast from settling tanks is run through a cascading process prior to discharge into the sea. All oil reception facilities are equipped with an oil separator, but no provisions is made for the removal of any other residual contaminants from the waste water, such as, heavy metals.

Port preparedness and response plans have been established in the form of a Contingency Plan in order to provide means of eliminating and confining potential environmental damage associated with accidents, such as spillage of chemicals and other hazardous substances and water and seabed damage. This would involve an analysis of the port with the intention of identifying and assessing risks in relation to global marine activities, cargo handling and port layout.

Marsamxett Harbour has been partially converted into a yacht marina to accommodate about 700 seacraft and equipped with related facilities. The creeks serving as the marina have a water depth ranging from 4 to 8m and 100m wide and this, together, with quays and other related infrastructure, prevent the presence of adequate circulation. The establishment of the marina has thus amplified the effects of poor water circulation, modifying the movement of the near-shore waters and bottom sediments, with consequent changes in the ecosystem characteristics of the area. Dredging is responsible for the



release of large amounts of undissolved solids or silt, augmenting the water turbidity, and all this having drastic effects on marine flora and fauna.

The Malta Dry Docks caters mainly for ship maintenance and repair and is thus one of the highly potential pollution sources in Grand Harbour, especially through the discharge of wastes containing antifoulants, oils, and such substances, and the deposit of sand blasting remnants into the sea.

Oil pollution sources in Malta may originate from deliberate dumping or accidental release from passing ships, from operational discharges from ships, from ships undergoing repairs in the ship yard in Dockyard and French Creeks or from tank cleaning at the deballasting and slop reception station in Rinella Creek.

A marina usually provides a base for a variety of boating activities. Sited in an enclosed area of water sheltered from prevailing strong winds and heavy seas, yet with an access to the open sea. Some of the activities cause water pollution and these deleterious effects have to be mitigated before they cause irreversible damage to the water quality and marine habitats. Besides being aesthetically unattractive, a fetid, stinking marina may also contain pathogens, which act as health hazards for man. Eutrophic conditions caused by excess nutrients may be lethal to fish and other marine life.

Pollutants released, such as petroleum hydrocarbons and organotins, may be toxic to the marine organisms. There may also be the incidence of eutrophic conditions due to the elevated concentration of nutrients and microbiological contaminants released from the discharge of untreated sewage, waste water and agricultural runoff. Consequently, this is apt to cause a drastic fall in the level of dissolved oxygen, and water transparency and an increase in primary production. The best way of controlling water quality hazards in a marina is to restrain polluting activities. Pollution control is most effective when designed from concept.

Dredging and construction activities carried out at the yacht marina were responsible for the release of large amounts of undissolved solids or silt, increasing the turbidity of the water in the creek. Dissolved substances included heavy metals and pesticide from disturbed sediments. Even though these adverse effects on water quality are short-term, the influence of these conditions on marine flora and fauna may be more drastic and recovery may be extremely slow. All this will represent a substantial impact on the marine environment in the creek.

Bunkers refer to residual fuel oils and marine gas oil used as fuels for ship machinery. The ship-to-ship (STS) transfer of oil presents certain risks, oil spills, unless it is conducted in suitable shelter from rough seas and swell and provided certain guidelines are adhered to as regards the area chosen, weather conditions, navigational warnings and the knowledge of certain technical information.

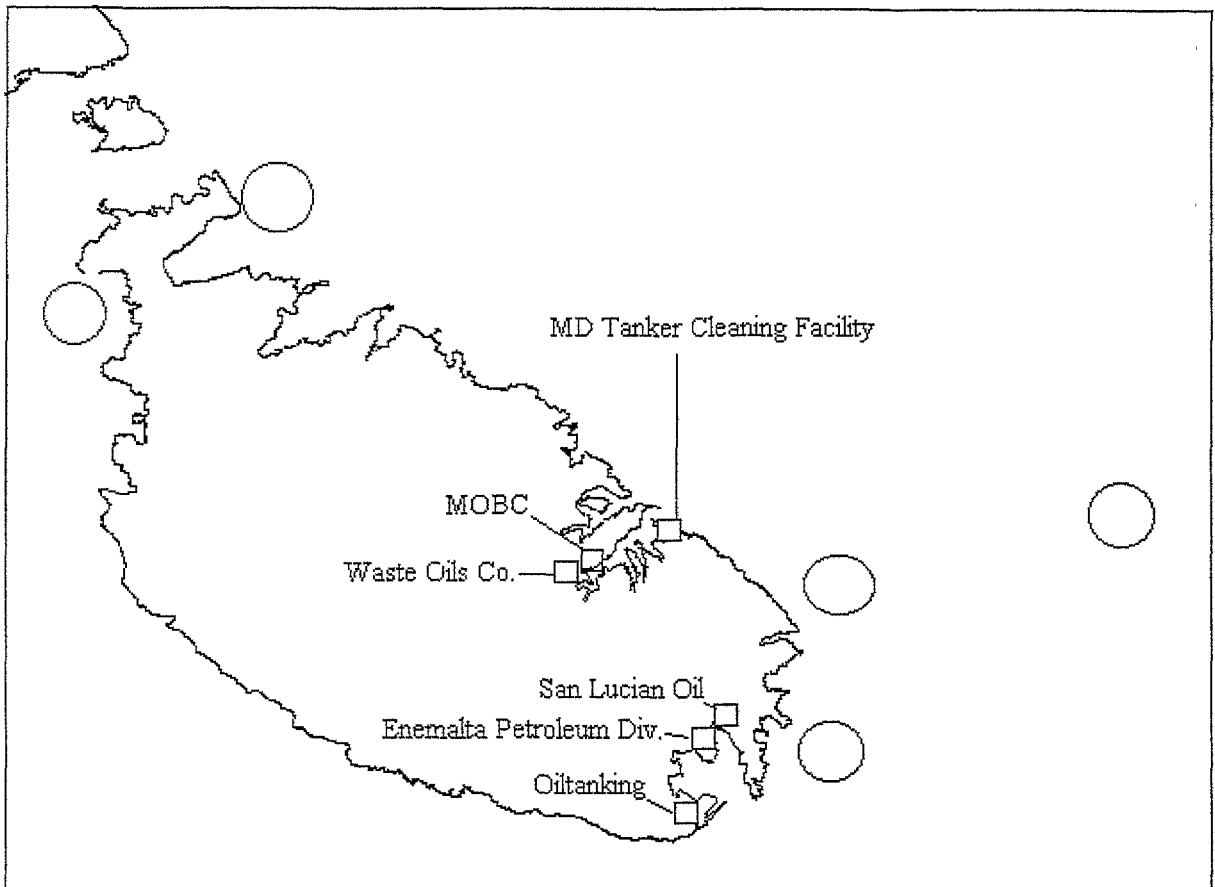
Offshore STS transfers within Maltese Territorial Limits (12 nautical miles) are mainly limited to bunker operations although STS lightening may be permitted. For offshore bunkering, the Malta Maritime Authority has designated five bunkering sites located off the coast in the area depicted in figure. These were selected after water depth, nature of bottom and frequency and density of sea traffic where considered. Hence this minimises the risk of pollution accidents which could be high considering that around 400 ships are bunkered offshore in a year. The total bunker throughout Malta is around 450,000 tonnes of which 65% is done offshore while 35% is carried out in Grand Harbour and Marsaxlokk, where the damage from any oil spill accidents would be considerable.

In the Malta Drydocks, some solvents and resin epoxy fillers are used and residues of these may end up in the sea. Copper-based wood preservative is often used, as well as degreasers and thinners. Paint residues are stored and disposed off as solid waste by the waste collectors (possibly dumped in Maghtab). Some grit blasting is carried out in this yard. Copper slag (approx. 6 tonnes per year) and fine grit (approx. 10 tonnes per year) are used for aluminum surfaces. Some of this may reach the sea. Lubricating oils, gray water (showers, etc) and black water (toilet tank contents) are removed from boats and disposed of by Malta Drydocks. Lube oils are sent to Tank Cleaning Farm. Other liquids are possibly discharged into sewers.

Approximately 5m<sup>3</sup> of lube oils and 5m<sup>3</sup> of black (sewage) water are generated annually from the servicing of boats. With regard to antifoulants, most boats now use copper based paints: Tin based paints are used only on the larger boats (1-2 boats per year). A single sample of wastewater running down the slip ways was analyzed during the present study. The results show a moderately elevated level of TBT (470 ng Sn/l) and traces of zinc (0.1ppm) and arsenic (2.1 µg/l). This data is insufficient to assess the quality of waste waters reaching the marine environment from this installation.

Marine discharges from this sector, may be through discrete point sources such as those found at Malta Drydocks, where waste waters are led to the shoreline through a pipeline, or be of a diffuse nature, where waste waters generated through land-based activities, may ultimately end up at sea, through runoff.

However, while the point discharges are much more easy to evaluate and assess, as well as to control, those of a diffuse nature are difficult to quantify and therefore to assess. The control of such diffuse sources is more likely to be possible through the control of the land-activities which originate them. For example, it may be possible for an authorization system to be able to issue permits for certain land-based activities which are known to generate waste waters which may indirectly



**Figure 2** Location of Bunkering Sites (Axiak & Delia, 2000)

reach the marine environment, through land runoff. In the case of the ship yard and ship repairing sector, these activities may include: operations along slip ways, on quays as well as within floating or fixed docks. The issuing of permits for such activities should be covered by provisions for:

- a) how to collect, manage and dispose of any solid and liquid wastes generated through such land-based activities;
- b) how to minimize spillage which may residues on land and which subsequently be washed off by rainwater into the sea.

## 2.4 The tourism industry

In the last years, over one million tourists have been visiting the islands annually, mainly during summer. Meeting the needs generated by this industry has further added to the pressure and makes extraordinary demands on the coastal zone resources. Tourism alone is associated with an assortment of polluting activities including sewage discharge, waste generation, congestion and human pressure, building and construction of visually intrusive and ecologically damaging amenities.

Most activities take place on the beach or within 50m seaward. These include hotels, restaurants, shopping centers and marinas. Most of the hotels are concentrated in the more popular seaside resorts in the north and eastern coasts of Malta. Most of the hotels are equipped with swimming pools, dosed with chlorine, cooling systems and desalination plants. As a result, this causes the discharge of contaminated water into the sea along the coast in the vicinity, water containing chlorine, borates, and washings, among others.

Most of the pollution associated with this industry originates from the discharge of water into the marine environment from the desalination plants and cooling systems of hotels and other accommodation premises. Such discharges, besides the close proximity to the shore, periodically contain cleaning and/or disinfecting agents which end up into the sea close to the shore. Swimming pool water discharged into the sea is also a source of pollution through the introduction of chlorinated water which discharges close to the shore and hence may also be harmful to shore organisms.

## 2.5 The agricultural industry

Diffuse pollution is more often related to agricultural techniques relying on the heavy use of fertilizers and pesticides runoff from urban and industrialized zones and the settling of urban pollutants.

The geographical character of the agricultural area and land use will determine and affect the coastal pollution influx rates originating from runoffs. The major pollution problem is the oxygen deficiency caused by the discharge of organic loads. Enrichment through nutrient loading may stimulate symptomatic changes, among which are the rise in algal proliferation, the deterioration of water quality and other negative changes which may interfere with the usage of protected waters.

Pesticide use in Malta is profuse and widespread. The amounts of pesticides used have exceeded 500,000kgs per year. Though it is the general tendency to minimize the use of organochlorines and encourage the use of more environmentally friendly compounds such as organophosphates, carbamates and similar short active pesticide, control on field use is severely lacking.

Agricultural practices in Malta have changed considerably during the past decade. Increased population growth coupled with tourism induced market forces have been instrumental in procuring the moves away from the traditional type of farming to more "intense" and commercially-based methods. Crop production is ensured throughout the year, to the detriment of the soil and at the expense of the nutrients that are necessary for the healthy development and growth of plants and crops.

Through the adoption of such intensive farming practices, the demand and consumption of pesticides and fertilizers have increased considerably with the main objective of ensuring that nitrates and phosphates are liberated and that nutrients are imparted to the soil at the point of application.

Following heavy irrigation or seasonal rainfall, nitrate and phosphates are washed away to migrate seaward via runoff or similar routes. The influx of these nutrient chemicals into the marine environment will depend on the interplay of several factors, primarily the nutrient concentration levels present in the soil, the rate of flow of the transport medium (runoff), the distance of the source from the coastal zone and the accessibility specified by the topographical features of the zone.

There are now several fertilizers in common use, namely ammonium sulphate, urea, ammonium nitrate, calcium ammonium nitrate, ammonia, nitrogen sol, other nitrogenous compounds, ammonium phosphate and NPK compounds.

Though extreme conditions accompanied by a marked turbidity (due to high phytoplankton biomass) have not to date been recorded, limited increases of primary activity have been recorded locally in some "closed" coastal areas situated in the vicinity of a discharge or where rapid dispersion of nutrients is inefficient.

## 2.6 The aquaculture industry

Fisheries are adversely affected by over-fishing and by environmental pollutants, creating a serious threat to fishery resources, especially in the coastal seas. The growth of the mariculture industry is a response to the demand for fish and the decreasing prospects for the capture fisheries.

Mariculture is itself a victim of environmental degradation and pollution, wherever toxic wastes are discharged into coastal bays. It is also a cause of environmental degradation resulting from the cleaning out or flushing of mariculture sites releases excess food material and chemicals (e.g. fungicides). The species that are principally the object of mariculture in Malta are the gilthead sea bream (*Sparus aurata*) and the sea bass (*Dicentrarchus labrax*).

All fish farms operating in the Maltese Islands since the industry was launched in 1988, use the intensive system of farming and fish rely entirely on the external supply of high protein (>20%) food, usually based on fishmeal, for the rearing of high value fish species. There are seven operating fish farms. The ones at Marsaxlokk Bay, Mellieha Bay, Mistra Bay, Marfa, Salina Bay, St. Paul's Bay, St Thomas Bay and il-Hofriet, utilising cage culture farming. Good water exchange through the cages is essential for the replenishment of oxygen and the removal of waste metabolites, although it can cause food losses.

Hatchery production does not meet the local demand for fry, so a high proportion of the required juveniles are imported from overseas hatcheries, mainly from Europe. Since summer 2000, a major tuna penning project was initiated, consisting of a tuna farm located off is-Sikka l-Bajda, NE of Mellieha, with a maximum production capacity going up to ca. 500 tonnes annually.

Wastewater from aquaculture units is rich in suspended matter, thus increasing the water turbidity and affecting photosynthesis, leading to higher mortality rate of stock. The impact depends partly on the characteristics of the aquaculture unit, the type of operation, total biomass and fish size and feed used, and partly on the ability of water to handle such matter, which in turn depends on hydrographic conditions. Other factors include climate, water quality and depth, sediment type, benthos density and diversity and liability to eutrophication.

The main components of organic effluents are organic carbon, ammonia, nitrates and phosphates which enrich the water, stimulating primary production, thus influencing phytoplankton composition and the occurrence of algal blooms which are often toxic. This waste also raises the levels of chemical compounds such as inorganic and organic nitrogen, and causes the spread of bacterial species, particularly anaerobic bacteria which produce toxic gases. Bacterial decomposition causes sediments to become anoxic, which in turn will lead to de-oxygenation of water with consequent species mortality.

Wastes from a fish farm mainly result from faeces and excreta of the fish in the cages and from the excess uneaten food passing through the cage. Dissolved wastes from excretion, dissolution of settling particles, and inputs from sediments, consist of organic material, inorganic nitrogen and phosphorus compounds and dissolved micronutrients. Nitrogen is emitted into the marine environment either in the form of ammonia from the fish itself or from the gills. These make up about 270 tonnes of nitrogen emitted per year into the marine environment.

Most particulate waste from uneaten food and faeces settles beneath the cages to be either consumed by benthic fauna or decomposed by bacteria. Organic carbon acts as a substrate for the bacteria so that the available oxygen is rapidly depleted to be replaced by oxygen diffusion from the sediment surface and by exchange of the pore waters within the sediment. These processes are affected by the particle size of the sediment, the coarser the particles the lesser the oxygen depletion. When all the oxygen available is used up, anaerobic metabolism replaces oxygen by nitrate which is reduced to ammonia, sulphate which is reduced to sulphide and carbon dioxide which is reduced to methane which are toxic to fish.

Aquaculture units also release disinfectants, pesticides, fertilizers, antibiotics, hormones and others from the foodstuffs. Much of this ends up on the seabed below the cages to be swallowed by fish and later to be excreted and become concentrated in the sediment. Biocides and algacides used to control parasites are lethal to organisms although this process is not carried out in most of the fish farms in Malta. Several biocides and antifoulants based on copper are applied to the cages and other structures set up in the water in order to prevent fouling. Leaching of heavy metals from these chemicals are now causing serious physiological damage to marine organisms as seen from studies on benthic animals carried out at the University of Malta and all over the world. Unfortunately, there is to date no fixed legislation on the usage of antifoulants in Malta, either on boats or on fish farming structure. Wastes such as food, faeces, urine, also cause local damages on biodiversity, mainly through the loss of habitat diversity.

There is no evident significant impact of the sea-based fish farming units located in exposed sites to good water circulation and dispersive characteristics. For the case of fish cages in Mistra and possibly also Mellieha, there is evidence that such sites are exposed to occasionally high nutrient loads, and particularly at Mistra and in St. Paul's Bay, there are indications that this may be leading to a localized increase in productivity.

The benthic impacts of the fish cage units situated over shallow waters, e.g. Mistra and St. Paul's Bay, are quite significant. In Mistra and St. Paul's Bay, there are clear indications of long-term impact of fish farming, through occasionally high nutrient loads, and increased productivity, as well as degraded benthos. It could be argued that such undesirable effects may be not be attributed uniquely to the fish farming activities in this locality. But it is now reasonably certain that such activities are making a significant contribution to a general effect on the environment.

## **2.7 Domestic and industrial wastewater**

Sewage pollution is often associated with increased levels of nutrients leading to eutrophic conditions and algal blooms. Transient algal blooms have been reported to occur in Marsamxett Harbour and Salina Bay; moderate eutrophic conditions have been reported in Marsascala, Marsamxett Harbour and Grand Harbour. Although data are not sufficiently extensive to draw definite conclusions, it shows that in general, pollution by sewage and other land-based sources has led to mild eutrophic conditions in localised semi-enclosed areas.

A number of popular bathing areas are exposed to sewage pollution which renders them at least temporarily unfit for bathing for several weeks during summer. Coastal areas in the vicinity of a sewage outflow suffer drastically through water quality deterioration. Domestic sewage may also contain phosphorus-based detergents while industrial waste may include components, such as heavy metals, which are known to accumulate in a variety of organisms (Capelli, Franchi & Zanichchi, 1978).

### **2.7.1 The sewerage system**

There are three main continuous sewage outfall systems, two in Malta (Wied Ghammieg and Cumnija/Anchor Bay) and one in Gozo (Ras il-Hobz). Waste water from Wied Ghammieg and Ras il-Hobz is discharged through submarine pipes at a suitable distance from the shore. Wied Ghammieg is situated off the east coast of Malta, just south-east of Grand Harbour, on a moderately exposed coast where water circulation is satisfactory (mid-depth average current velocities over 3.6m/min) (Drainage Department, 1996). An average amount of 58,000m<sup>3</sup> of raw sewage are discharged daily. Deleterious effects are amplified when the pipeline is ruptured close to the shore while direct onshore discharge and overflowing due to malfunction raises the risk of potential health hazards. Accumulation is enhanced when persistent input exceeds the rate of removal via dilution, dispersion, degradation and absorption by sediment.

In Gozo, almost 90% of all wastewater is discharged through a submarine outfall at Ras il-Hobz. Two other outfalls are located on the northern coast at Wied Mielah and in San Blas Bay. These outfalls discharge minor quantities of wastewater.

The sewerage system is presently being upgraded. Within the next few years, it is expected that all domestic and industrial wastes will be treated to secondary or tertiary level and that the effluents will be discharged into the marine environment through submarine outfalls equipped with proper diffusers. A Storm Water Master Plan is also presently being implemented to make full and efficient use of storm water and to prevent overloading of the sewerage system which would have negative environmental impacts. The number of sewage outfalls will be reduced to one in Gozo (Ras il-Hobz) and two in Malta (Wied Ghammieg and Cumnija).

For coastal waters, microbial pollution is the critical problem when municipal waste waters are considered. Eutrophication may be the end result where sewage effluent is discharged into enclosed areas such as harbours and bays. Here secondary, and even tertiary, treatment of the effluent would be required. Domestic sewage contains mainly pathogens while industrial sewage will also contribute pathogens especially if it originates from dairy and food processing industries, canning industries and laundries. At present, the BOD<sub>5</sub> of raw domestic sewage ranges between 200 and 100mg/L/day and that from such industries as distilleries, meat processing and tanneries may run in the thousand and tens of thousands mg/L.

The three major areas effected due to continuous drainage outfalls are:

Area	Type of Effluent	Description	Area Affected	Quantities discharged (m <sup>3</sup> /day)
Wied Ghammieg	Industrial & domestic	Submarine pipe; distance from shore 750m; depth 40m	Lat 35 53'.07N Long 14 32'.04E Lat 35 54'.14N Long 14 32'.67E Lat 35 54'.06N Long 14 32'.85E Lat 35 53'.06N Long 14 32'.06E	58,000
Ic-Cumnija	Domestic	Directly on shore	Lat 35 58'.22N Long 14 20'.15E Lat 35 58'.22N Long 14 20'.25E Lat 35 58'.05N Long 14 20'.26E Lat 35 58'.05N Long 14 20'.16E	6,700
Ras il-Hobz	Industrial & domestic	Submarine pipe; distance from shore 300m; depth >45m	Lat 36 01'.04N Long 14 16'.70E Lat 36 01'.13N Long 14 16'.85E Lat 36 00'.98N Long 14 16'.96E Lat 36 00'.91N Long 14 16'.79E	5,830

It is microbial and viral pollution that emerges as the critical criterion for assessing the satisfactory performance of outfalls. Hence the levels of pollution at these sites is dependent on the level of dilution performance at any particular instance. It is however frequently observed, that there is lack of efficient dilution, such that the coastal areas in close proximity to these sites become potentially contaminated and unsuitable for bathing for several kilometers downstream of the original discharge point.

Most industries discharge their effluents into the sewerage system, a one pipe system that serves for both industrial and domestic waste. 90% of this waste water is discharged untreated into the marine environment through the outfall mentioned above. The remaining 10% (about 17,000m<sup>3</sup>/day) is diverted to Sant Antnin Waste Treatment Plant in Marsasкала where treatment is effected to reuse the reclaimed water for irrigation. The resulting sludge is then discharged untreated through the outfall at Wied Ghammieg.

Through the implementation of LN 8 of 1993, a set of regulations published under the Environment Protection Act 1991 and the Water Services Authority Act 1992, the limits of the chemical and physical parameters are established and control of effluent quality is achieved. These regulations require individual industries to perform regular analysis which can be made available to the Discharge Permit Unit on request.

### 2.7.2 Emergency outflow systems

Emergency outflow systems come into action during emergency situations. Following the eventual discharge of profuse organic matter, the availability of oxygen in the marine environment at these localities is highly depressed. The dissolved oxygen requirements for growth and reproduction of marine organisms vary between 5 and 8mg/L. Lower concentrations encountered at overflow sites (1.25mg/L - Drainage Dept., 1996) present a risk to marine life and constantly trigger modification in the composition and abundance of certain marine species.

There are a total of 60 pumping stations in Malta and Gozo. Of these only seven are equipped with a generator. 67% of the pumping stations are equipped with an overflow system, which leads directly to sea. The others simply overflow into nearby fields and others close to inhabited areas.

### **2.7.3 Disposal of activated sludge**

The plant is producing a significant amount of activated sludge which is potentially enriched in heavy metals and other contaminants. This sludge is presently being discharged into the marine environment (through the Wied Ghammieg submarine outfall). This essentially means that the major benefit being derived from the SASTP is that of waste water reuse, and not of environmental protection from sewage discharge into the marine environment. The setting up of additional sewage treatment plants will necessarily lead to the production of bigger volumes of activated sludge. Therefore there is urgent need to invest in treatment facilities capable of adequately treating such activated sludge.

# CHAPTER 3

## ENVIRONMENTAL POLICY AND INFRASTRUCTURE

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The Maltese environmental legislation stems mainly from obligations set out in the Environmental Protection Act of 1991. The Development Planning Act 1992, together with the Structure plan enacted under it, is another important legislative instrument. Moreover, Malta is party to a number of International Conventions and as such has a number of international commitments.

It has become increasingly clear that the EPA has certain shortcomings and certain sections have never been brought into effect. Difficulties have been experienced by the Environment Protection Department to make certain Government Departments understand, let alone implement, basic environmental policies, including those related to biodiversity conservation.

Environmental standards are required in areas relating to discharges into the environment, water quality, air quality, noise levels, hazardous substances and waste management.

### 3.1 National legislation relating to coastal and water quality

The primary legislation with respect to environment protection is the Environment Protection Act of 1991. The following regulations have been issued on the strength of this Act, in relation to protection of the marine environment:

- Sand (Preservation Act, 1949)
- Petroleum (Production) Act 1958
- Marine Pollution (Prevention and Control) Act 1977
- Malta Maritime Authority Act 1991
- Bunkering (Fuels) Act 1994
- Water Services Corporation Act 1991
- Development Planning Act 1992
- Code of Police Laws (Chp. 10)

Other national legislation pertaining to the protection of the marine environment and the control of pollution from land-based sources include, but are not restricted to:

- LN 77/92 Marine Mammals Protection Regulations
- LN 08/93 Environment Protection (Sewer Discharge Control) Regulations
- LN 128/97 Deposit of Waste and Rubble (Fees) Regulations, 1997
- LN 155/97 Marine Mammals (Amendment) Protection Regulations.

### 3.2 National environmental institutions

In Malta, the Government agency that is specifically designated as being responsible for environment protection is the Environment Protection Department. However, in practice other agencies have an environmental remit, especially since the Environment Protection Act of 1991 gives powers to all Ministers to protect the Environment. The following agencies are mostly involved:

- The Works Division (especially the Drainage Department)
- The Malta Maritime Authority
- The Planning Authority
- The Civil Protection Department
- Local Councils
- Department of Agriculture
- Department of Aquaculture and Fisheries
- The Health Division (especially the Public Health Department)

As can be deduced, integration and co-ordination of activities among agencies relating to land-based sources, compliance and enforcement are of primary importance. In practice, the co-ordinating agency is the Environment Protection Department. However, it is widely recognised that the unclear legislative mandate and the paucity of resources render this role arduous. The result is considerable overlaps, if not outright conflicts.

It has been agreed that both the Environment Protection Act and the institutional set-up of the Environment Protection Department need to be revised and upgraded. The new Act and set-up will take into account the new challenges linked to development and higher standard of living, as well as international obligations and responsibilities that Malta forms a party to as a result of the signing and ratification of Conventions.

### 3.3 The Environment Protection Department and the Environment Protection Act, 1991

A legal framework law in the form of the Environment Protection Act was adopted in 1991 to address environmental and resource problems which may act as threats to the legitimate enjoyment of, amongst others, our sea, by all those species who live around, in or on it, or who otherwise depend on it.

The laws of Malta are in line with modern environment legislation elsewhere. The "*precautionary approach*" is adopted in the case of toxicity or potentially toxic substances in such a way that protection and the reduction of risk, even in the absence of absolute scientific proof, is assured. The "*polluter pays principle*" was adopted in an extended form so as to include liability for damages by pollution. The principle of "*public participation*" is also legislatively established. It creates a right of redress not only to those parties considered to be directly affected, but also to any person who believes that the decision-maker's decision and subsequent action was incorrect.

Hence, Maltese Environment legislation stems from obligations set out the Environment Protection Act. These obligations specify the duty of the Government for and on behalf of present and future generations, in order to:

- take all those measures both preventive and remedial that may be necessary for the protection of the environment of Malta;
- collaborate with other governments and entities for the protection of the world environment;
- endeavour that food, drink, the land, the sea, and the air are free of contamination from any toxic substances.

The Environment Protection Act also makes provision for the protection of Marine Living Resources. Part 4 deals with discharges into the sea and lays down extensive administrative provisions in relation to protection of the sea from marine contamination hazards. It prohibits discharge into the sea of any matter deriving from land, air, or from any ship, airplanes or other craft "*without the authorisation of the minister*".

The Environment Protection Act of 1991 (Annex II) covers the following main issues:

1. Monitoring and information – Directives and codes of practice concerning the quality of the environment
2. Control of toxic substances including fuels and harmful even if not toxic substances
3. Noise and energy control
4. Discharges into the sea
5. Disposal and dumping on land
6. Protection to the flora and fauna
7. The historical heritage
8. Environment Impact Assessments
9. Authority of review
10. Civil damages and punishments in criminal law
11. Operation, repeal and interpretation

At present there are no marine protected areas within Maltese territory. Fishing and/or diving are restricted in certain sea areas round the Maltese Islands for reasons of safety and to preserve important wrecks and marine archaeological remains rather than for the protection of marine habitats and species. There are currently two pieces of legislation under which marine protected areas of various sorts may be established in the Maltese Islands.

Part 6 of the Environment Protection Act, 1991 deals with the protection of flora and fauna. It is in terms of the provisions of this Act that the various nature reserves currently existing in the Maltese Islands have been established, however the Act does not define 'Nature Reserve' nor are there any blanket regulations applicable to all Nature Reserves.

In the version of the Structure Plan currently in force published under the Development Planning Act, 1992, there are thirteen policies drawn up towards the promotion of marine conservation. These identify fourteen candidate sites to be designated as Marine Conservation Areas, following adequate technical studies as well as full consultation with interested bodies from the administrative, private and public sectors.



### 3.4 The Development Planning Act 1992 and Environment Impact Assessments

The Planning Authority was set up through the enactment of the Development Planning Act 1992, which establishes the strategic framework within which it will operate. Its primary function is to promote proper development and control such development in accordance with approved policies and plans, with close collaboration with Government Departments and other agencies.

The Planning Authority is concerned with the implementation of the Structure Plan, which was adopted in 1992. The Structure Plan is a document consisting of a number of policies aiming to guide the Planning Authority's work towards controlled development in Malta. The Plan contains specific policies referring to the coastal zone, which recognise the need to establish a comprehensive Coastal Zone Management Policy for the Maltese Islands. Other Structure Plan policies with direct relevance to development within the coastal zone include policies on Rural Conservation, Sand Beaches, Marine Conservation Areas, Agriculture and Tourism. The Act requires that Government and state agencies seek permission from the Planning Authority for all developments by private developers. The Structure Plan is currently being reviewed with the aim of identifying needs for amendment and upgrading the policies for development on the Maltese Islands.

An important step towards the control of development on the coast has been the introduction of Environment Impact Assessment (EIA) for any development project on the coastline as specified in the Environment Protection Act of 1991. EIAs are a tool to evaluate the impacts that certain projects will have on the natural and socio-economic environment. The Planning Authority adopted Policy and Design Guidelines (currently being reviewed) on the procedures required for the EIA process in 1994. The document outlines a coordinated approach in the administration of the EIA process between the Planning Authority and the Environment Protection Department. Once a report on the assessment is submitted, it is subject for consultation by other administrative bodies and organisations which may have statutory control over a particular sector. Non-Governmental Organisations (NGO's) are also consulted and if the process requires the submission of an Environment Impact Statement, this is subject to public hearing. Presently, the EIA process is carried out jointly between the Environment Protection Department and the Planning Authority.

### 3.5 Some national legislation

In Malta, various laws and regulations under the jurisdiction of several government institutions enforce regulations for the setting up of new activities. The Drainage Permit Unit under the Department of Works covers industrial and municipal wastewater disposal. The Department of Agriculture mainly covers animal husbandry and agricultural activities while the disposal of solid waste is regulated by legal notice 128/97 of Maltese law. Infrastructural projects fall under the jurisdiction of the institution mainly concerned. However, all these projects require a permit primarily by the Planning Authority. The Development Planning Act and the Environment Protection Act both require an environment impact study in the case of most permits and in this way a close observation of the activity operations can be kept for compliance and control.

New projects are approved by the Planning Authority and seconded by the Environment Protection Department only in the context of the surrounding environmental situation and in full knowledge of the best provisions for the natural environment and human health. In spite of this, several inspections have to be carried out on a periodic basis in order to ensure compliance with the conditions set out by the relevant authorities. Nevertheless, violation of law is very often encountered so that the authorities are then in a position to issue fines or the appropriate punishment for the infringement.

#### 3.5.1 Wastewater discharge into public sewers: LN 8/93

Most industrial plants discharge their waste waters into the public sewerage system, which in Malta is a one-pipe system catering for both domestic and industrial waste. The discharges of industrial effluents into the public sewers are controlled by Legal Notice 8/93 dealing with Sewer Discharge Control Regulations, established under the Environment Protection Act of 1991 and the Water Services Corporation Act of 1991.

This Legal Notice established a specific authorization system for discharges of industrial waste waters into the sewers on the basis of limit values for a number of parameters. These limit values are in line with those required by Dangerous Substances Directive and its daughter Directives. Indeed in some cases such as boron, the limits are more stringent.

LN 8/93 is intended to cover only industrial discharges (as defined by its Article 2). In fact the Drainage Department is in the process of revising such regulations to bring it in line with the amended LBS Protocol. In its present format, LN8/93 provides for the issue of Public Sewer Discharge permits which are renewed annually.

At present, chemical analysis and monitoring of discharges into sewers is being carried out by the industry itself. This data is regularly presented to the DD, at the time of permit renewal (annually). The Drainage Department has currently no monitoring programme and very limited data on the chemical composition and characteristics of effluents as discharged into the marine environment.

### 3.5.2 Legislation and control of local fish farming

In accordance with the Development Planning Act (1992) and the 1997 amendments to this Act, the establishment of a marine or land-based fish farm requires full development permission. Furthermore, an Environmental Impact Assessment (EIA) is required in accordance with the *Planning Guidance for Environmental Impact Assessment in Malta* of the Planning Authority and the Environment Protection Department.

Structure Plan policies on aquaculture encourage the development of offshore large-scale production units. Small-scale units should preferably be located on the coast within committed areas. The *Planning and Design Guidance for Fish farming* is the key policy adopted to regulate the development of fish-farming within the Maltese Islands. The *Policy Guidelines* was adopted by the Planning Authority in 1994 and defines the requirements for the development of marine and land based fish-farms as well as for hatcheries. It also provides guidelines on farm management, and includes the protocol for the monitoring programs. Currently, the *Guidance* is being reviewed and updated.

Control of aquaculture operations is the responsibility of several regulatory bodies including:

- Planning Authority
- Veterinary Services Department
- Ministry of Agriculture and Fisheries/ National Aquaculture Centre
- Environment Protection Department

### 3.6 International legislation

At the International level, Malta has constantly shown great interest in the emergence of a comprehensive co-operation taken between Mediterranean countries to combat marine pollution and is party to a number of international treaties concerned with the protection of the Mediterranean marine environment. Malta ratified the Barcelona Convention in December 1977 together with the Dumping and Co-operation in Emergencies Protocols, followed by ratification of Specially Protected Area Protocol in 1982, the all important Land-Based Protocol in 1983 and the Offshore Protocol in 1984.

More recently, Malta has also ratified the revised Barcelona Convention and five of its Protocols, including the LBS Protocol, during the 11<sup>th</sup> Meeting of the Contracting Parties in 1999. Malta also acceded to the 1972 London Dumping Convention and to MARPOL 73/78. In consonance with the emphasis laid down by Agenda 21, efforts of national environmental and scientific institutions have brought forth the seriousness of the environmental conditions of the coastal ecosystems of the Maltese Islands

New regulations make it compulsory that the construction, operations and equipment, procedures, personnel and practices of all ships, bunker barges, marine terminals and facilities and cargo activities must be in full compliance with all requirements laid down in IMO Conventions to which Malta has acceded, while taking into consideration prevailing local conditions and the requirements of the Authority. The Authority has also set up operational standards in accordance with international practice and to be relevant to safety requirements especially in the environmental aspects.

The Environment Protection Department co-ordinates oil pollution combating activities, using its own limited capabilities. Massive oil pollution episodes deriving from vessels berthed in internal waters or from shore-based installations necessitates enforcement. Polluters are made to pay all relevant costs of the recovery exercise and are also required to liquidate damages to other parties, including environmental damages. Ships may be detained in harbour pending settlement of claims. Malta is signatory to numerous Conventions pertaining to pollution control from this section e.g. OPRC Convention, CLC Convention.

Malta has signed and ratified a number of international conventions on both the global and regional scale which address particular issues or areas relevant to the coast, including the Convention on the Conservation of European Wildlife and Natural Habitats 1979 (BERN), the United Nations Convention on the Law of the Sea 1982 (UNCLOS) and the Convention on Biological Diversity 1992 (RIO).

Specifically geared towards encouraging co-operation for the protection of the Mediterranean region, the level of commitment urged from the Contracting Parties to the Barcelona Convention is significantly higher; the success of implementation relies on the performance of each State in effecting the outlined provisions.

# CHAPTER 4

## COMPLIANCE AND ENFORCEMENT

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### 4.1 Permit systems

Permit systems exist for almost all activities in the Maltese Islands, covered by the relevant laws enforced by the institution/s concerned according to the nature of the activity. Industrial activities, animal husbandry, urban development domestic wastewater and solid waste disposal and infrastructure projects are all controlled primarily by the Planning Authority as regards development (Development Planning Act and Structure Plan), the Environment Protector Department as regards the safeguarding of the surrounding natural environment and the prevention and control of pollution, the Commissioner of Police in relation to trading permits, the Department of Health in order to take provisions for the safeguarding of human health, and any other authority directly or indirectly concerned with the particular issue.

### 4.2 Compliance and enforcement

When a permit is awarded for the installation of a particular activity of any kind, a set of conditions is usually laid out by the various government institutions concerned. These conditions refer both to existing national legislation and any provisions laid down in international conventions and protocols to which Malta is signatory, and to any regulations which may be added in the particular case, at the discretion of the institution. The applicant is thus bound by law to abide by the conditions laid down, otherwise he will be severely penalized by heavy fines, permit withdrawal or in any other way as provided for in the regulations concerned.

Prior to the issue of a permit, the industrial installation or proposed activity is sometimes checked, although this may not always be the case. An investigation is often very helpful as it would provide the authority with a better idea of what the operation will involve and of the surrounding environment. It would avoid any misunderstandings and misinterpretations which may arise in the future between applicant and authority as a result of breaching of a law or non-compliance.

In the event that a complaint is lodged about a certain activity, the authorities concerned set about to carry out an inspection in order to justify or otherwise the complaint. If the complaint is justified, provisions are set at once to inform the owner of the activity and urge him to remedy the situation. In the worst case, the owner may be fined, or his activity temporarily closed down, or punished in some other way, if he persists in being a nuisance to the surrounding environment and all its inhabitants.

There are several activities in Malta, ranging from maritime activities and the other activities already described manufacturing industries, catering industry, construction industry, farming industry and others. All such industry require permits in order to operate and carry out their various activities. Several authorities have an enforcement inspectorate section within their jurisdiction. They serve to check and make sure that the provisions laid out in the permit conditions are complied with and applied. Such authorities include the Planning Authority Inspectors, the Health Inspectors and the Police Force.

#### 4.2.1 Degree of present compliance with LN 8/93

The LBS Protocol requires that an authorization system is set up to take appropriate steps to stop contraventions. The administrative setup for such enforcement of discharges into sewers is already available at the Drainage Department. However, while this legal notice has been in force for a number of years, the degree of compliance of the local industry is low. It is worth to try to identify the reasons, which eventually led to this undesirable situation.

When the LN8/93 was drafted the Sectors which had to eventually comply with its provisions were never consulted during the drafting stage. Little efforts were made to educate or sensitize the relevant industrial concerns about the benefits which are derived from compliance. Subsequently, most small industries perceived such regulations as simply additional burdens which they had to overcome or defeat, or to carry unwillingly. The Drainage Department is now planning to organize a comprehensive education and sensitization campaign amongst the local industry to raise awareness re obligations for sewer discharges.

The granting of permits for discharges at present is being carried out on the understanding that the relevant trade premises will, through voluntary agreement come into line with the LN in due course. However it is understood that this 'interim period of grace' will end by 2002, when all traded premises have to fall in line with the provisions of the LN (as would be amended by then).

However, a study on the impact of compliance with CD 76/464/EEC and other related Water Quality Directives with Reference to Marine Discharges in Malta assesses the feasibility of such a deadline being reached will depend very much on:

- (a) the level of technical advice which is forthcoming, especially to the micro-industries, regarding the manner in which they will have to implement a liquid effluent management plan (which includes monitoring and reporting obligations) as well as how to treat their waste waters to ensure compliance;
- (b) the availability of external funds which would cover the additional costs for such compliance;
- (c) the manner in which the sludge which may result from the wastewater treatment will be effectively disposed off in a cost-effective manner by the relevant competent authority.

This is important since the provisions of the LBS Protocol are very much in line with the requirements of these Directives.

### **4.3 Impact of compliance on certain coastal activities**

#### **4.3.1 Fish farming**

Marine discharges from four fish farming sites were assessed. Waste waters from these sites are generated from net washings as well as from packing plants. In the case of the National Aquaculture Centre (NAC) at Marsaxlokk, most of the discharged waste waters are from tank washings. In the latter case, the estimated annual volume of marine discharge is significantly high and may reach 240,000 m<sup>3</sup>. The other fish farms discharge waste waters at rates varying from 300 to 1000 m<sup>3</sup> per year.

The significant water quality parameters in such marine discharges which need to be addressed, are suspended solids and possibly nutrient levels, especially in the more 'sensitive areas' such as Mistra. This would require treatment plants to reduce suspended solids and nutrient levels to compliance levels.

#### **4.3.2 Fuel terminals**

Five fuel terminals discharge a global volume of 242,100 m<sup>3</sup> per year, of which, almost 93% originate from a single terminal (MD Tanker Cleaning Facility). Waste waters from these sites are mainly generated from de-watering of fuels during storage, or from oil-water separation of ballast waters, or from rainwater runoff.

In nearly all cases, the present treatment of oily waste waters do not conform to the 5 mg/l limit. Relatively high levels of heavy metals may be found in such waste waters due to the nature of the oil (i.e. spent oil) being handled.

#### **4.3.3 Water production**

The total amount of waste waters generated from this sector and which are discharged directly in the marine environment, is significantly high and represents approximately 5% of the total waste waters being currently discharged at sea.

It is most likely that there will be no compliance problems with this type of discharges. Nonetheless, monitoring of these waste waters undertaken within the framework of the present study has revealed elevated levels of boron (2 to 6 ppm) and possibly other metals. The levels of boron and other heavy metals in ambient waters next to the inputs of the plants may be already high, but evidently by its very nature, the plant is essentially concentrating such potential contaminants and discharging them back into the marine environment, from where they originated in the first place.

### **4.4 Control of waste water discharges into the marine environment**

Specific provisions for the control of discharges of waste waters into the marine environment both directly from industrial establishments, as well as from the public sewers (even after treatment) are still lacking. Part IV of the Environment Protection Act of 1991 provides for control of such discharges into the sea, but it still needs to be brought in force.

The authorization system to control such marine discharges will be set up within the Environment Protection Department, through the new regulations which will provide for maximum permissible limit values (Annex 1).

The authorisation system for the control of marine discharges will

- To lay down emission standards into the marine environment;
- To identify sensitive and less sensitive coastal areas for the purpose of marine discharges;
- To grant authorization for marine discharges for limited periods under given conditions (as determined by Commission).
- To review authorizations every 4 years;
- To take appropriate steps to stop contraventions;
- To draw up an inventory of discharges;
- To establish a national monitoring network;
- To report to the Commission about its work.

Furthermore, this authorization system will have to control through action plans and other management tools, illegal and accidental discharges into the marine environment, as well as land-based discharges from diffuse sources.

## 4.5 Compliance of waste water discharge systems

The total annual volume of waste waters being discharged from the official sewage outfalls of the Drainage Department is estimated to be 25.8 million m<sup>3</sup>. Any resultant discharges into the marine environment, which may arise directly from the treatment of sewage or from the treatment of sludge, will be in full conformity with the relevant EU Directives, and hence with the obligations outlined in the LBS Directive.

### 4.5.1 The Sewerage Master Plan (SMP)

The Malta North and Malta South sewage treatment infrastructure is expected to be set up and fully operational in compliance with EU Directives, by 2005. This plan, resulting from extensive research carried out by consulting services engaged by the Ministry for Environment, is currently being implemented. The main aim of the consultancy was to identify and assess the sewerage infrastructure in the Maltese Islands in order to highlight problem areas and propose a series of upgrades and improvements to the network.. The suggested improvements and upgrades are the following:

- New relief mains
- Retention basins and galleries
- Pumping stations and rising mains
- Sewage treatment plants

The Sewerage Master Plan is aimed to eventually bring the collocation, treatment and disposal of waste water in line with the obligations of the Land-Based Sources Protocol under the Barcelona Convention and the Directives of the E.U.

The site for the construction of a sewage treatment plant in Gozo is in the vicinity of Ras il-Hobz sewage outfall. Moreover it is the aim of the SMP to phase out the sewage outfalls at San Blas and Wied il-Mielah, by redirecting these discharges to Ras il-Hobz.

The treatment technology to be adopted is the activated sludge method utilizing extended aeration and final settlement. The parameters for treated waters to be discharged at sea will include:

BOD5	25 mg/l
Suspended Solids	35 mg/l
Ammonia-Nitrogen	2 mg/l

Furthermore, such treated waste waters will need to comply with the maximum permissible limit values for marine discharges as stipulated in the forthcoming regulations of the Environment Protection Department controlling discharges to the marine environment.

Currently, sludge produced from the SASTP is being discharged at sea but with the advent of the treatment plants, no such sludge will be discharged at sea. Assuming a 20% dry solid content, the estimated yearly amounts of sewage sludge to be generated in Malta and Gozo by the year 2005, are as follows:

Wied Ghammieg	25,500 m <sup>3</sup>
Cumnija	3,400 m <sup>3</sup>
Gozo	2,300 m <sup>3</sup>

The actual treatment of sludge and its eventual disposal is still under consideration and several options are now being considered.

#### 4.5.2 Authorization system for discharge to the marine environment

Discharges of waste waters into the marine environment (as well as upstream, i.e. from the industrial plants into the sewers) must be controlled by an Authorization System in the form of a Competent Authority. This is a basic requirement of the Protocol for the Protection of the Mediterranean Sea against Pollution from Land-Based Sources and Activities (Article 6).

An authorisation system is already in place within the Drainage Department to control discharges of industrial waste waters into the sewers. The authorization system to control discharges into the marine environment will be established within the Environment Protection Department, through the drafting and implementation of new regulations.

Nonetheless, it is self-evident that the two authorization systems will need to be integrated in a common framework and strategy. This dichotomy of authorizations is the result of the present administrative setup within the Ministry for the Environment, which includes two separate Departments: i.e. the Drainage Department and the Environment Protection Department. Although regular and formalized contacts between these two Departments exist, coordination of the activities of these two entities will need to be improved.

According to the present plans, the Drainage Department will act not only as the authorization system to control discharges into the sewers from industrial plants, but also to ensure that such waste waters are sufficiently treated to a level that would be compliant with the obligations of the LBS Protocol, prior to their discharge into the marine environment. While water treatment may be undertaken by third parties, it will be the Drainage Department who will ultimately be responsible for such compliance as regards discharge to the sewerage system.

In the event of non-compliance for marine discharges such as the accidental discharge of sewage from a malfunctioning sewage pumping station, or in the event of malfunctioning of treatment plants, then the Environment Protection Department would be bound to take actions (including the setting of fines and penalties) to stop such contraventions.

The costs of such contraventions may well be passed on to the industrial plants themselves, if it may be proved that the malfunctioning of a particular treatment plant was their fault (e.g. due to discharging of substances which may interfere with the functioning of such treatment plants). It must be ensured that there is no lax of stringent controls over marine discharges arising from public sewers or from sewage treatment plants. If this happens, then there is a probability that the level of control over the private sector for direct marine discharges will also be jeopardized. In effect, such a marine discharge control strategy is a chain of responsibilities and of obligations for various sectors.

The authorisation system for the control of marine discharges will need to fulfill all provisions of the LBS Protocol. Such marine discharges will include:

- a) Permanent or semi-permanent point sources;
- b) Illegal or accidental point or discrete sources;
- c) Diffuse sources which may arise from land-based activities which could be located either on the coastline, or well inland.

#### 4.6 Water quality elements and objectives

The water quality objectives being established are aimed at:

- a) prevention of deterioration of the ecological status and of the pollution of coastal waters;
- b) restoration of good ecological and chemical status for already degraded coastal areas;
- c) achieving compliance with the relevant standards and quality objectives in protected areas.

In applying such water quality objectives to Malta, the authorization or competent authority will first identify the characteristics of coastal waters and to collate data pertaining to an analysis of the relevant characteristics, a review of human impact and an economic analysis of water use. For coastal waters, the quality elements that need to be taken into consideration for the classification of ecological status (as well as for the setting up of reference conditions) include phytoplankton, macroalgae and angiosperms (i.e. *Posidonia* meadows), benthic invertebrate fauna, hydrodynamic elements which may affect this biota, nutrient levels, temperature range, oxygen balance, water transparency and levels of synthetic and non-synthetic pollutants.

#### 4.7 Identification of human impact and economic implications

In identifying human impact, the competent authority will:

- a) identify and assess the significance of point sources of pollution, by chemicals

- b) identify and assess the significance of diffuse sources of pollution;
- c) estimate land-use and sea-use patterns, such as aquaculture, marina developments, port developments, etc..
- d) estimate any other significant impact, such as those generated from maritime traffic, bunkering etc...
- e) assess the level of risks from the human impacts and the probability that coastal waters will fail to meet the set environmental quality objectives.
- f) take into account the recovery of costs (including cost of resource as well as environmental cost, such as that required to rehabilitate the environment, after impact) according to the polluter pays principle.

## 4.8 Monitoring obligations

The Competent Authority will be in charge of a monitoring programme to assess the ecological and chemical status of coastal waters, so as to permit classification of such waters into a number of status classes: high, good, moderate, poor or bad. Such a programme is being built up gradually, as part of the National Marine Monitoring Programme forming part of the MED POL Monitoring Programme network of the Mediterranean.

Emphasis is being made, not only on chemical monitoring, but also and especially on bio-monitoring which will include the use of bio-indicator species or groups of species, such as phytoplankton and benthic invertebrates.

Over the past three years, the Pollution Control Co-ordinating Unit has initiated a programme of coastal water quality monitoring, though on a much smaller scale and with a very limited number of parameters being measured. Colour-coded maps for water quality have been produced, and these have proved to be quite effective in communicating data information for the purpose of environmental management.

Quality objectives for the identified relevant pollutants are being formulated as these would result from the data on sea water and marine sediment quality generated over a certain period of time. These could include emission limit values and preferably indicate the time frame over which the load of a particular pollutant would be reduced. This will entail the setting up of emission reduction targets.

In the case of diffuse sources of discharges, environmental quality objectives could be achieved via the control of land-based or sea-based activities through the setting of standards for products and procedures. Compliance monitoring will need to be carried out to supervise the effectiveness of the implementation of such a programme. The LBS Protocol covers details of this type of monitoring as outlined in the relevant Annexes.

The programmes referred to in Article 5 of the Protocol must be comprehensive and coherent and include all provisions for the control of diffuse and point sources of discharges, both into the sewers as well as into the marine environment. In the local situation, where different Legal Notices control sewer and marine discharges separately, the relevant legislation as well as their implementation programmes must demonstrate that they are in fact fully complementary and form part of a single programme.

### **Note:**

One of the main environmental programmes in the Maltese Islands is the MED POL programme for marine environmental monitoring. This programme has been running for several years to various degrees, depending on the currently available resources. In 1996, the MEDPOL monitoring programme for Malta was revised and is now being implemented in phases.

The MEDPOL programme was envisaged to cover the periodic analysis of sea water and sediment quality together with biomonitoring component utilising several organisms which have been established as bioindicators of pollution. Physical chemical and microbiological parameters are measures. The Environment Protection Department is currently monitoring the microbiological content of seawater in about 30 sites in Malta and Gozo on a monthly basis. Some chemical parameters are also measures. Offshore seawater and sediment samples have also been collected seasonally and analysed for chemical parameters including heavy metals. It is envisaged that the MEDPOL programme will be extended in the near future to include biomonitoring and to study more areas on a more frequent basis, depending on the particular needs of the area in question. The methods of analysis applied are established by the Mediterranean Action Plan in order to conform to the provisions laid down by the said action plan under the Barcelona Convention.

Prior to 1996, the MEDPOL programme had been carried out to various extents, sometimes emphasising microbiology, at other times stressing on heavy metals, depending on the resources available. Concurrently, the Department of Public Health carries out an extensive programme on bathing water quality. This monitoring programme is carried out between May and October on a weekly basis. Samples are collected from over 100 sites per week and analysed for microbiological parameters following WHO legislation for the safeguarding of human health. Bathing beaches are closed down if the microbiological quality is unsatisfactory and are not reopened unless clear indication of an ameliorating situation is observed. Since 2000, the Bathing Water Programme has been extended and is now being carried out jointly by the Environment Protection Department and the Department of Public Health.

As regards inland water quality, the Environment Protection Department has carried out a tentative programme for the last three years. This involves the collection of water samples from various annual and perennial springs in Malta and Gozo. These samples are then analysed for such physicochemical parameters. Samples are collected from five localities in Malta and two in Gozo on a monthly basis mainly during the rainy season. Results indicate rather high levels of conductivity and nitrate and nitrite nitrogen in most areas probably due to the leaching of fertilizers.

Provisions are currently underway to set up a more extensive programme covering a greater number of runoffs in various localities in the Maltese Islands. Samples will be analysed on a more frequent basis for physical, chemical and biological parameters, especially to include substances resulting from pesticide and fertilizers in the more agricultural areas.

## 4.9 Control of marine discharges

Point marine discharges will be controlled through the establishment of emission limit values or the implementation of emission controls based on best available techniques. Diffuse sources may be controlled by establishing best environmental practices, codes of good practice. All such discharges are to be controlled in such a way so as to achieve the set environmental quality objectives.

After laying down emission standards into the marine environment and identifying sensitive and less sensitive coastal areas for the purpose of marine discharges, the Competent Authority may grant authorization for marine discharges for limited periods under given conditions. An inventory of such point (and possibly diffuse) sources of discharges needs to be kept and regularly updated.

In case of coastal waters which are found to be degraded or below 'good' status, environmental quality standards will be established for pollutants concerned, followed by thorough investigation of the point or diffuse sources which may be leading to such a situation. This practice is already carried out to some extent, but lack of enforcement power severely hinders the proper implementation of such a system.

Authorization for discharges or for the particular land-based activities constituting the diffuse source, will then be reviewed and if necessary, withheld. In this way, the Competent Authority must be able to take the appropriate steps to stop contraventions resulting both from point and diffuse sources.

## 4.10 Establishing criteria of impact of specific substances

As already reviewed above, the Competent Authority is required to set environmental standards with the ultimate aim of protecting human health and to preserve environmental quality.

The present section will present a very brief review of the background to the ecotoxicological methods applied in assessing impact of a particular pollutant (as required by the terms of reference for this study) as well as in establishing controls for its discharges through a range of standards.

The impact of a specific pollutant will ultimately be dependent on the following factors:

- a) the level of its toxic effects on target species;
- b) its fate in the various marine environment phases: such as: surface micro layer, water column and sediments, including environmental persistence.
- c) its bioavailability to target species;
- d) the degree of its bioaccumulation and biotransformation

## 4.11 Applying a combination of environmental standards

All the above data and information will be rendered useful and applicable to environmental management, only if they may be used in the setting up of standards. One way to view the whole range of available environmental standards is to take into consideration the various stages of environmental issues and activities ( or the so called Environmental Chain Effect) which need to be controlled in order to protect human health and the environment.

**Behavioural standards** indicate how people should behave in order to protect the environment. As a rule, they are enshrined in legal regulation, but are part of education and information aimed at enhancing public awareness of the environment. For example, in the case of marine discharges from the Malta Drydocks, a well-organized sensitization campaign aimed at the workers, would greatly facilitate the implementation of better dock practices, in order to reduce the generation of liquid wastes, as well as to dispose of them in a correct manner.

**Product Standards** concern the requirements for formulation or importation or rate of use of a particular product. In our case, it may be made illegal to use-organotin as antifouling paints at the Manoel Island Yacht yard.



**Activity Standard** stipulates the manner in which a particular activity will need to be undertaken in order to comply with the regulations. For example, the dock activities at the smaller shipyards (e.g. Cassar Ship Repair Ltd.) may be better controlled if dock practices would be authorized only under certain conditions and if specific codes of practice are adhered to. For example, the disposal of empty solvent containers into the sea, may be strictly prohibited, so as to reduce the possibility of marine contamination by the relevant organics.

**Emission Standard** would determine which emission concentration should not be exceeded either in absolute terms or in terms of a particular frequency and/or during a specified period of time. Most of our current regulations make use only of such standards.

**Zoning Standards** relate environmental quality to the distance of a source of emission. Their purpose is to specify the safe distance between a pollution source and a target receptor.

**Immission Standards** specify, sometimes in terms of probability, which concentrations or exposure levels should not be exceeded in a particular area.

**Environmental Quality Standards** specify the concentration of a harmful chemical, which should not be exceeded in a particular environmental compartment, such as sediments, biota and/or water. These type of standards are required by the Water Framework Directive.

To conclude, the Authorization System will need to consider applying any combination of such standards in order to achieve the set quality objectives.

**MONACO**

## I. Introduction

La Principauté de Monaco est située dans l'hémisphère Nord, sur la côte Sud de l'Europe et sur le rivage Nord de la Méditerranée occidentale, à égale distance du détroit de Gibraltar et de celui des Dardanelles.

La mer de Monaco fait partie du bassin Liguro-Provençal. Ce bassin se présente comme un demi-cercle ouvert au sud-ouest. Il est le siège d'importants mouvements d'eau, notamment dans la colonne comprise entre 0 et 200 mètres, ainsi que d'une circulation cyclonique.

Le relief sous-marin est comparable au relief terrestre. Le talus continental est très pentu puisque l'on atteint la profondeur de 1100 m en moins de 6 km et de 2000 m à 24,5 km au large de Monaco.

La superficie de la Principauté est de 1,9 km<sup>2</sup> et ses eaux territoriales s'étendent sur environ 71 km<sup>2</sup>. Son territoire maritime est donc 35 fois plus étendu que son domaine terrestre. Ce dernier se caractérise par une bande côtière très étroite de 3,5 km de longueur orientée NE-SO. Il est entouré par un cirque de hauts reliefs compris entre 550 et 1100 mètres d'altitude à moins de 3 km du littoral. Il se situe au pied d'un bassin versant de 7 km<sup>2</sup>, formé par quatre petits vallons drainés par des cours d'eau à régime torrentiel.

Le dernier recensement général de la population, effectué durant l'année 2000, fait apparaître une population d'environ 35000 habitants. La Principauté et les communes avoisinantes, forment une agglomération qui approche les 60000 habitants.

A partir de la seconde moitié du XX<sup>ème</sup> siècle, l'activité économique de la Principauté n'a cessé de se développer, en faisant aujourd'hui un grand pôle d'activité de la région. Le commerce, l'industrie, les activités financières et l'immobilier sont les piliers de cette économie florissante.

## II. Informations de base sur les activités

### II.1. Activités les plus importantes vis à vis de l'environnement du littoral

#### Généralités sur le déversement des eaux usées domestiques et industrielles

La Principauté est équipée d'une unité de traitement primaire des eaux résiduaires depuis 1987 et d'une unité de traitement secondaire créée en 1990. Le réseau de collecte des eaux usées étant majoritairement de type unitaire, en cas de forte pluie, soit seul le traitement primaire fonctionne (débit compris entre 600 litres/s et 2000 litres/s), soit les effluents sont rejetés au niveau zéro de la station par les émissaires d'orage (débit supérieur à 2000 litres /s).

En fonctionnement normal, les installations d'assainissement traitent tous les effluents domestiques et industriels. Il est à noter que l'usine d'incinération des déchets dispose de sa propre station de traitement des eaux ; elle n'est pas raccordée au réseau d'assainissement.

L'installation de traitement primaire des eaux usées est gérée par un service de l'Etat : le Service de l'Aménagement Urbain (SDAU).

Les installations de traitement secondaire des eaux usées et d'incinération des déchets ménagers sont des concessions de l'Etat. Leur contrôle obéit à un cahier des charges.

Voici maintenant quelques éléments d'appréciation de l'impact des activités sur l'environnement du littoral.

#### Activités industriels

Le tissu industriel monégasque est dense et varié. De nombreux secteurs sont présents :

- Alimentaire
- Chimie fine / Pharmacie / Cosmétique
- Production de matériel électrique et électronique
- Imprimerie / Emballage
- Métallurgie / Mécanique
- Textile
- Transformation des matières plastiques
- Divers (travail du bois, fabrication de bijoux, centrale à béton...)

Mais toutes ces activités n'ont pas le même potentiel d'impact sur l'environnement du littoral. En fait, deux secteurs consomment et rejettent environ 75% de la totalité de l'eau utilisée dans l'industrie :

- **Chimie fine / Pharmacie / Cosmétique.** Les conditions opératoires de ce secteur sont très strictes, et la quasi totalité des eaux de procédé sont utilisées pour le nettoyage des locaux et des appareils.

- **Transformation des matières plastiques.** L'eau est principalement utilisée comme fluide thermique.

Aucun site de production ne dispose de station de pré-traitement des effluents avant rejet au réseau ; ces derniers sont pris en charges par les installations d'assainissement de la Principauté.

### Le développement urbain et les projets d'infrastructure

En liaison avec une extension sur le milieu marin qui nécessite des précautions à prendre vis à vis de l'impact.

### Le tourisme

Lié à une augmentation de production d'énergie, de déchets, de consommation d'eau, de circulation automobile et des navires de plaisance.

## **II.2. Utilisation des meilleures technologies disponibles et des technologies propres**

Les industries importantes commencent à intégrer à leur fonctionnement les bonnes pratiques environnementales :

- réduction des solvants chlorés,
- remplacement des solvants organiques par des composés biologiques,
- réduction des déchets,
- tri et recyclage des déchets,...

Cette politique est conjointe à l'obtention des Normes ISO et de l'Assurance Qualité.

Pour les entreprises moyennes ou artisanales, l'utilisation de ces technologies est très modérée voire inexistante.

## **II.3. Qualité de l'eau de mer et protection des habitats**

La qualité bactériologique de l'eau de mer est très satisfaisante, toutes les sources de pollution tellurique étant prises en charge par le réseau d'épuration.

Les travaux d'évaluation de la qualité des écosystèmes marins par des indicateurs biologiques (limite de l'herbier,...) et par les biomarqueurs montrent que la zone est peu affectée par la pollution locale ou régionale.

En ce qui concerne les habitats, le peuplement d'algues invasives appartenant à l'espèce *Caulerpa taxifolia* est régulièrement suivi dans le cadre d'une collaboration avec l'IFREMER.

## **II.4. Dispositions concernant la surveillance de l'environnement**

### Qualité des eaux marines

Plusieurs programmes sont en place depuis maintenant plusieurs années pour surveiller la qualité des eaux marines :

- Programme de surveillance de la qualité des eaux de baignade (analyses microbiologiques préconisées par la Directive Européenne n° 76/160 ; dénombrement des *Escherichia coli* et *Entérocoques*).
- Programme de surveillance de la qualité microbiologique de l'eau de mer par l'intermédiaire d'êtres vivants (analyses microbiologiques sur un mollusque bivalve, la moule ; son système de nutrition, la filtration, en fait un intégrateur de la pollution bactérienne littorale).
- Programme de surveillance de la présence de métaux lourds dans le milieu marin (là encore, utilisation des moules).
- Programme de surveillance des propriétés physico-chimiques de l'eau de mer (neuf paramètres sont mesurés à chaque campagne mensuelle : turbidité, température, salinité, oxygène dissous, chlorophylle, phéophytine et sels nutritifs).

### Elimination des eaux usées

L'unité de traitement secondaire des eaux résiduaires contrôle elle-même la qualité des eaux qu'elle rejette. Les méthodes d'analyse et les protocoles opératoires sont validés par un organisme agréé, l'APAVE.

Les valeurs cibles des paramètres mesurés sont spécifiées dans le cahier des charges fondé sur la Directive Européenne en la matière.

### Incinération des déchets

L'usine d'incinération des déchets urbains contrôle elle-même la qualité des gaz et de l'eau qu'elle rejette.

### Qualité de l'air

La surveillance de la qualité de l'air a été mise en place en 1991. Elle est assurée par un réseau automatique de six stations qui fournit des mesures de l'air en continu. Un poste central informatisé recueille quotidiennement ces données.

## **II.5. Niveau de sensibilisation du public aux questions de l'environnement**

Le public est sensible à l'image de marque environnementale de la Principauté et à ses répercussions dans les médias.

Le public est systématiquement informé sur la qualité des eaux de baignade et de l'atmosphère urbain.

Des actions de sensibilisation sur la biodiversité et la lutte contre la pollution sont ponctuellement organisées.

## **II.6. Influence des ONG sur les prises de décision**

En Principauté, il existe deux associations pour la défense de l'environnement :

- L'Association Monégasque pour la Protection de la Nature, qui développe préférentiellement ses actions dans le cadre des deux aires marines protégées instituées en Principauté et dans le cadre d'opérations de reboisement conduites sur les collines des communes limitrophes de la Principauté, en collaboration avec les services administratifs monégasques.
- ECOPOLIS, dont les objectifs visent le fonctionnement de la vie urbaine et en particulier la gestion et le recyclage des déchets, les économies d'énergies.

Il est difficile de mesurer l'influence de ces organisations sur les prises de décision. Toutefois, la petitesse du pays rend les acteurs proches des pouvoirs publics et par conséquent leur donne une capacité d'influence réelle.

### **III. Législation**

#### **III.1. Cadre juridique pour l'environnement**

La réglementation monégasque en matière de protection de l'environnement repose sur deux textes principaux :

- La Loi n° 1198 du 27 mars 1998, portant Code de la Mer. Ce texte régit, entre autres, l'ensemble des activités humaines susceptibles d'avoir un impact environnemental sur le milieu marin.
- La Loi n° 954 du 19 avril 1974, concernant la lutte contre la pollution de l'eau et de l'air. En fait, toutes les dispositions relatives à la lutte contre la pollution de l'eau sont abrogées par le Code de la Mer. La loi n° 954 régit donc les émissions de gaz dans l'atmosphère.

Des textes d'application sont prévus par les deux Lois décrites ci-dessus. Certains d'entre eux existent déjà, et d'autres restent à créer.

Ce contexte réglementaire va bientôt évoluer, puisqu'une Loi Cadre pour la protection de l'environnement est en cours d'élaboration.

#### **III.2. Contrôle global du milieu**

- Le contrôle de la qualité des eaux marines est confié, par Ordonnance Souveraine, à la Direction de l'Environnement, de l'Urbanisme et de la Construction. En revanche, les modalités pour effectuer ces contrôles ne sont pas réglementées explicitement. En pratique, les normes européennes sont systématiquement adoptées pour effectuer les contrôles.
- La protection des habitats est aussi confiée à la Direction de l'Environnement, de l'Urbanisme et de la Construction. De plus, la gestion de la réserve sous-marine de Monaco (Larvotto) et celle de la réserve à corail (Pointe Focignane) sont spécifiquement confiées à l'Association Monégasque pour la Protection de la Nature.

### III.3. Le contrôle des activités spécifiques

#### Elimination des eaux usées

Les mêmes contraintes réglementaires s'appliquent pour l'élimination des eaux usées industrielles et celle des eaux domestiques, qui sont collectées et traitées par le même réseau d'assainissement. Le cahier des charges du fonctionnement de l'Unité de Traitement des Eaux Résiduaire fixe les conditions de rejet au milieu de l'ensemble des effluents.

Le contrôle de l'activité est complet.

#### Incinération des déchets

L'incinération des déchets urbains et des déchets industriels banals est assurée par l'usine d'incinération de Monaco dont les prescriptions de fonctionnement sont définies par le cahier des charges.

Le cahier des charges a été établi en tenant compte de la réglementation européenne. L'évolution récente de cette dernière en la matière devrait entraîner des modifications de l'installation existante.

Le contrôle de l'activité est complet

#### Elimination des déchets industriels spéciaux

La réglementation ne permet pas que les déchets industriels spéciaux (solides et liquides hors effluents) soient pris en charge par les installations de la Principauté. Les exploitants font donc appel à des sociétés françaises spécialisées dans la collecte et le traitement de ces déchets. Ces sociétés sont soumises à la réglementation européenne.

Le contrôle de l'activité est partiel.

#### Développement urbain

Toute activité est soumise à autorisation et est régie par un Règlement d'Urbanisme, de Construction et de Voirie créé par l'Ordonnance Souveraine n° 3.647 du 9 septembre 1966.

Le contrôle de l'activité est complet.

#### Les projets d'infrastructure

Ces projets sont réalisés par l'Etat. Lors des études de ces projets, une attention particulière est portée à la protection de la qualité des milieux et de l'environnement en général.



### **III.4. Autres dispositions réglementaires**

#### **L'étude d'impact sur l'Environnement (EIE)**

Le règlement d'urbanisme et de construction actuel ne prévoit pas d'EIE mais prévoit des enquêtes *commodo, incommodo* relatives aux établissements insalubres ou bruyants.

D'une façon générale, un dossier est déposé auprès de la Direction de l'Environnement, de l'Urbanisme et de la Construction. Ce dossier est étudié par les différents services concernés au sein de la Commission Technique pour la Lutte contre la Pollution et pour la Sauvegarde de la Sécurité, de l'Hygiène, de la Salubrité et de la Tranquillité Publique, créée par l'Ordonnance Souveraine n° 10.505 du 27 mars 1992 chargée de donner un avis au Gouvernement.

#### **Inspections en matière de contrôle de la conformité**

Des contrôleurs de pollution et des contrôleurs de chantier ont pour mission de visiter les implantations, souvent en conjonction avec les visites de la Commission Technique.

#### **Promotion de la conformité et application effective en cas de violation**

La promotion de la conformité est assurée par les contrôleurs des pollutions. La taille du pays permet une gestion de proximité des activités.

La Réglementation prévoit la nécessité de mise en conformité et en cas de non respect la possibilité de décréter la fermeture de l'établissement.

### **IV. Délivrance de permis**

#### **Activités industrielles**

A Monaco, toutes les activités industrielles (mais aussi artisanales et commerciales) sont soumises à autorisation établie par la Direction de l'Expansion Economique et délivrée par le Ministre d'Etat.

La procédure de délivrance d'autorisation se déroule en trois étapes :

- **La demande** : le pétitionnaire adresse à la Direction de l'Environnement, de l'Urbanisme et de la Construction un dossier de demande de permis de construire. Ce dossier contient :
  - un formulaire donnant des informations générales sur les travaux qui seront effectués.
  - une note de l'architecte : description extrêmement détaillée des travaux que le pétitionnaire veut exécuter.
  - un descriptif de l'utilisation et de l'occupation des locaux

- toute information complémentaire jugée nécessaire. Ces informations sont très variables en fonction du type d'activité (commerciale, industrielle, artisanale).
- L'examen : Le dossier est examiné par la Commission Technique. Elle donne alors un avis à la DEUC qui le transmet au pétitionnaire. Cet avis peut être une autorisation, un refus, une demande d'informations complémentaires.
- Le récolement : Si l'autorisation d'effectuer les travaux a été accordée, le pétitionnaire dispose d'un an pour démarrer les travaux. Une fois que les travaux sont terminés, il doit demander une visite de récolement pour que la Commission Technique constate la conformité des travaux avec le dossier de demande. Ce n'est qu'alors que l'autorisation d'utiliser les locaux et d'y exercer une activité est délivrée.

### Urbanisme et infrastructures

Les démarches de délivrance de permis pour les activités de traitement des déchets, de développement urbain et de développement d'infrastructure suivent la même logique que celle exposée précédemment. La différence réside dans les autorités consultées pour l'analyse du dossier et celles qui délivrent l'autorisation.

Les installations de traitement secondaire des eaux usées et d'incinération des déchets ménagers sont des concessions de l'Etat. Leurs autorisations font l'objet d'une Ordonnance Souveraine.

Les projets relatifs au développement urbain et aux infrastructures sont soumis au gouvernement, puis au Comité consultatif pour la construction et selon le cas, au Conseil Communal et au Comité Supérieur d'Urbanisme.

Dans tous les cas, la demande de permis donne lieu à un affichage public et les projets d'envergure sont présentés en séance publique au Conseil Communal.

### Autres permis (travaux)

Certains services sont en mesure de délivrer des autorisations sans que cela nécessite la publication d'un Arrêté Ministériel. C'est le cas par exemple pour la Direction de l'Environnement, de l'Urbanisme et de la Construction dans le cas de travaux mineurs (aménagement de façade, modification de devanture de magasins et boutiques).

De même, le Service de l'Aménagement Urbain autorise la réalisation de tranchées et l'arrachage ou le remplacement d'arbres dans les espaces verts de la Principauté.

## **V. Conformité et application effective**

### **V.1. Promotion de la conformité**

Vu la fiscalité particulière de la Principauté, il n'y a pas d'incitation financière à la conformité. Il faut cependant souligner la seule redevance environnementale perçue qui est liée à la consommation d'eau.

La promotion de la conformité à Monaco repose essentiellement sur la coopération qui se développe entre l'Etat et les responsables d'activités. Ces derniers se montrent de plus en plus demandeurs d'informations, voire de conseils, techniques et juridiques. Pour les obtenir, ils se tournent spontanément vers les services compétents de l'Etat (ceci est vrai en matière d'environnement bien sûr, mais aussi pour les mesures de sécurité). Le développement de ce type de relations favorise la transparence. En outre, il permet à l'administration de promouvoir en douceur la conformité d'une part, et les méthodes de production plus propre d'autre part.

## **V.2. Contrôle de la conformité dans l'industrie**

### *Contrôle avant la production*

L'ouverture d'un site industriel est toujours précédée par une visite de récolement de la Commission Technique. Un contrôleur des pollutions vérifie, au cours de cette visite, la conformité des installations en place avec celles décrites dans le dossier de demande d'autorisation d'exercer l'activité.

### *Contrôles périodiques*

La Commission Technique effectue une visite par an dans chaque industrie, quelle que soit sa taille.

Ces visites périodiques abordent tous les aspects de la vie de l'entreprise. Les participants sont :

- Un représentant de la commission technique
- Un représentant de la Direction de l'Expansion Economique
- Un contrôleur des pollutions
- Un sapeur pompier
- Un inspecteur du travail
- Un inspecteur de l'hygiène (si la société possède une cantine)

La multiplicité des intervenants rend les visites très fructueuses. Cette approche globale du contrôle de l'entreprise est bénéfique à la bonne prise en compte de l'impact des activités sur l'environnement et la santé, ainsi que sur la gestion des risques quels qu'ils soient.

### *Traitement des plaintes*

En cas de plainte, un contrôleur des pollutions se rend systématiquement sur place. Il recherche alors :

- la source de la nuisance
- les paramètres physiques permettant de quantifier la nuisance, s'ils existent
- à éliminer la nuisance en contactant le responsable.

Durant l'année 2000, 16 plaintes pour nuisance environnementale ont été déposées à la Direction de l'Environnement, de l'Urbanisme et de la Construction. 14 (85%) de ces plaintes ont été traitées de cette façon et ont trouvé rapidement (moins de 6 mois) une solution satisfaisante pour toutes les parties.

### Périodicité de contrôle de conformité pour certaines activités et responsables du contrôle

Comme cela a déjà été dit, les usines sont systématiquement visitées au moins une fois par an par la Commission Technique.

Les chantiers sont régulièrement visités par les contrôleurs de travaux (Direction de l'Environnement de l'Urbanisme et de la Construction), jusqu'à la visite finale des travaux par la commission de récolement (Commission Technique).

Les installations de traitement secondaire des eaux usées sont visitées tous les jours par un contrôleur de la Direction du Contrôle des Concessions et des Télécommunications, et une fois par an par la Commission Technique.

L'installation d'incinération des déchets ménagers est visitée tous les jours par un contrôleur de la Direction du Contrôle des Concessions et des Télécommunications et une fois par an par la Commission Technique.

### V.3. Structure des organes de contrôle

Le département de tutelle de tous les organes de contrôle est le Département des Travaux Publics et des Affaires Sociales.

En effet :

- La Commission Technique est un organe regroupant de nombreux participants de divers corps de l'administration. Bien que dépendant directement du Ministre d'Etat, son président est le Conseiller du Gouvernement pour les Travaux Publics et les Affaires Sociales. Elle a un rôle consultatif.
- La Direction du Contrôle des Concessions et des Télécommunications ainsi que la Direction de l'Environnement, de l'Urbanisme et de la Construction sont des services dépendant de ce Département. Elles doivent faire appliquer la loi.

### V.4. Effectifs des organes de contrôle

La Commission Technique est composée de 11 membres. En outre, elle peut compléter ses effectifs par tout expert dont elle jugera la présence nécessaire.

La Division « Contrôle des Concessions » de la Direction du Contrôle des Concessions et des Télécommunications comporte 4 membres.

Enfin, il y a 5 contrôleurs à la Direction de l'Environnement, de l'Urbanisme et de la Construction : 2 pour les pollutions et 3 pour l'urbanisme.

Ces effectifs sont à mettre en parallèle avec les données suivantes :

- 96 sites industriels
- 1 usine d'incinération
- 1 unité de traitement secondaire des eaux usées

## **V.5. Mesures en cas de violation ; Moyens d'incitation à la conformité et à l'application effective**

En cas de violation un constat d'infraction est adressé au Conseiller de Gouvernement pour les Travaux Publics et Affaires Sociales, puis au Ministre d'Etat pour poursuites judiciaires éventuelles.

En cas de non respect des lois pour la protection de l'environnement, le premier moyen d'incitation est la possibilité de ne pas renouveler l'autorisation d'exercer l'activité.

L'arsenal juridique prévoit aussi, en cas de non conformité, des amendes, des peines d'emprisonnement et l'obligation d'effectuer les travaux nécessaires dans les établissements concernés sous peine de fermeture. Ces mesures coercitives sont très rarement appliquées.

**MOROCCO**

*ROYAUME DU MAROC*

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*MINISTERE DE L'AMENAGEMENT DU TERRITOIRE  
DE L'URBANISME DE L'HABITAT ET L'ENVIRONNEMENT*

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*DEPARTEMENT DE L'ENVIRONNEMENT*

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*DIRECTION DE LA SURVEILLANCE ET  
LA PREVENTION DES RISQUES*

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*DIVISION DE LA SURVEILLANCE ET DE LA PREVENTION DES RISQUES*

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*DSR\_1/1/LN*

**RAPPORT SUR LE RESPECT ET L'APLICATION EFFECTIVE  
DE LA REGLEMENTATION EN VIGUEUR EN MATIERE DE  
LUTTE CONTRE LA POLLUTION**

## **I. Planification de la politique Nationale en matière d'environnement : Gestion de l'Environnement et développement durable au Maroc**

L'analyse du système écologique marocain révèle l'existence d'un potentiel de ressources naturelles important et varié. La surexploitation et l'utilisation anarchique de ces ressources menacent, cependant, leur pérennité. Elles sont à l'origine d'une régression des ressources en eau et du sol, responsables d'une dégradation végétale et animale importantes.

Les causes de la dégradation des ressources naturelles sont à la fois anthropiques et climatiques. L'aridité du climat, la fréquence des sécheresses ajoutées à la croissance démographique et aux politiques de développement, qui ont privilégié la productivité au détriment de la durabilité, ont contribué au dysfonctionnement des systèmes écologiques. De ce fait, les ressources naturelles ont été constamment sollicitées pour la satisfaction des besoins des populations dans une absence totale de réglementation et de sensibilisation.

### ***1.1. Coût de dégradation de l'Environnement :***

Les principales atteintes à l'environnement marocain affectent l'eau, l'air, les déchets solides, l'environnement urbain, sols et milieu naturel en particulier le littoral.

**Eau :** Epuisement et mauvaise qualité des ressources dus au pompage excessif, à la précarité de l'assainissement des agglomérations urbaines, au manque de collecte et traitement des effluents industriels, à l'érosion des sols et à l'utilisation excessive et irrationnelle des pesticides agricoles ;

**Air :** Mauvaise qualité de l'air due aux émissions atmosphériques de polluants par les voitures et les usines, surtout dans le Grand Casablanca, Safi, Rabat et Marrakech ;

**Déchets solides :** Insuffisance de la collecte et du recyclage des déchets solides municipaux et absence de décharges contrôlées dans la plupart des villes. Manque de réduction à la source, de recyclage et de traitement des déchets industriels et mise en décharge non contrôlée de ces déchets ;

**Environnement urbain :** Urbanisation rapide et incontrôlée et habitat insalubre et illicite ;

**Sols et milieu naturel :** Dégradation due à la surexploitation des terres de parcours, érosion et salinisation des sols, déforestation, désertification et dégradation de zones sensibles et protégées ;

**Littoral :** Pollution des eaux marines, érosion des côtes, diminution des ressources halieutiques et manque de politique d'aménagement et de préservation du littoral.

Tenant compte des principaux indicateurs d'environnement affectés par l'activité humaine, on estime le coût de dégradation de l'Environnement à un équivalent de 8% du PIB marocain (Estimation faite pour l'année 1992). Ce qui a imposé l'élaboration d'une stratégie environnementale à cet effet (cf. Tableau ci-dessous).



### Coûts de dégradations de l'environnement au Maroc (1992).

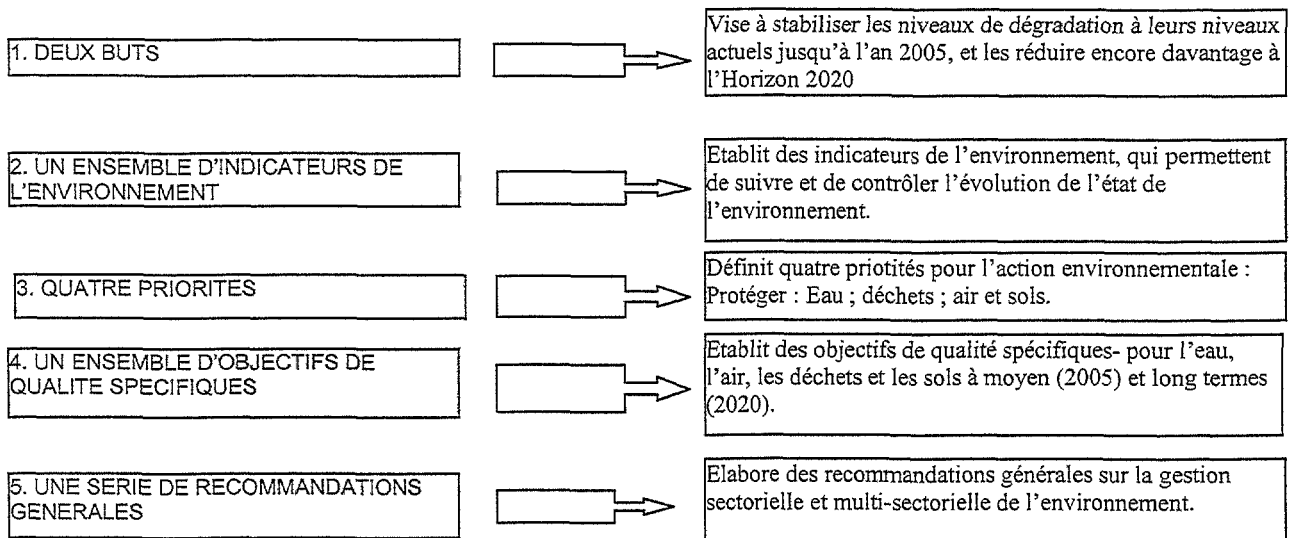
Composante environnementale	Coût annuel (Milliards de dirhams)	% PIB
Eau et déchets	14,5	6,0
Air	4,5	1,9
Sols et milieu naturel	0,7	0,3
<b>TOTAL</b>	<b>19,7</b>	<b>8,2</b>

### I.2. Priorités définies par la stratégie :

Au sein de cette stratégie, la dimension est régie par un certain nombre de principes dont notamment :

- L'intégration effective de tous les acteurs dans la planification et la mise en œuvre des mesures visant une gestion durable des ressources naturelles ;
- Le renforcement de l'intégration des organisations non gouvernementales (ONG) dans la planification et la mise en œuvre des activités ayant une incidence sur l'environnement ;
- La redéfinition du rôle de l'Etat en faveur des droits élargis accordés aux populations locales et leurs organisations de base à travers la décentralisation traduite par la régionalisation.

Cette stratégie définit les grandes orientations réunies en cinq points :



### I.3. Politique Nationale en matière d'environnement :

La stratégie nationale pour la protection de l'environnement et le développement durable a elle-même privilégié une approche en trois étapes :

- ◆ *Dresser un état de l'environnement à partir de quelques indicateurs et prévoir ce que sera cet état en 2020 en fonction des prévisions économiques des différents secteurs de l'économie marocaine ;*
- ◆ *Identifier et évaluer les impacts et les coûts de dégradation de l'environnement, notamment, les pertes de productivité et de production, coût de santé et dépenses de réparation ;*
- ◆ *Fixer des objectifs de qualité afin de réduire les coûts et avantages de ces objectifs.*

Cette stratégie a mis en exergue le manque de données dans de nombreux secteurs d'activités ou milieux récepteurs. Elle a appliqué pour certaines parties, la technique des indices de pression et a fait apparaître une liste des principaux polluants.

**La mise en œuvre de la Stratégie est prévue dans le cadre d'un "Plan d'Action National pour l'Environnement" (PANE)**

**Objectifs du (PANE) :**

Les domaines prioritaires visés dans le cadre du PANE sont comme suit :

- La protection et la rationalisation de la gestion des ressources naturelles ;
- La sauvegarde de l'environnement ;
- La protection des écosystèmes fragiles ;
- La sensibilisation et l'éducation environnementales ;
- La remise à jour des textes juridiques.

#### **I.4. Stratégie juridique<sup>1</sup>**

Conscient des défaillances réglementaires, le DE/MATHUE a élaboré récemment une stratégie juridique visant à doter la pays d'un cadre législatif et réglementaire adéquat et cohérent. Les objectifs poursuivis par cette stratégie consistent à :

- Mettre en place un cadre législatif et réglementaire conciliant les impératifs de protection de l'environnement et ceux du développement durable ;
- Assurer la cohérence juridique des textes environnementaux en vigueur et leur adaptation à l'évolution de la technologie et de l'état des milieux récepteurs ;
- Veiller à harmoniser la législation environnementale nationale avec les engagements souscrits par le Maroc aux niveau régional et national.

Pour atteindre ces objectifs, un certain nombre de projets de textes juridiques sont en cours d'examen pour approbation. Les lois proposées visent à actualiser et à compléter l'arsenal juridique et à l'harmoniser avec les engagements internationaux du Maroc. Elles portent en particulier sur :

- La protection du littoral ;
- La création d'un Fonds national pour la protection de l'Environnement ;
- La gestion des déchets et leur élimination ;
- Les normes générales et sectorielles des rejets dans l'eau;
- Les études d'impact sur l'environnement ;
- La mise en place de procédure d'autocontrôle ;
- La protection de l'atmosphère contre la pollution et la mise en place de normes de rejets dans le domaine de l'air ;
- La révision de la réglementation sur les établissements insalubres, incommodes ou dangereux ;
- La lutte contre la pollution et la mise en place de normes de rejets dans l'air ;
- La révision de la réglementation sur les établissements insalubres, incommodes ou dangereux ;
- La lutte contre la pollution marine ;

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<sup>1</sup> (cf. Cycle de la réglementation en annexe)

- La révision de l'arrêté relatif aux caractéristiques de produits pétroliers ;
- La révision du texte organisant le CNE, CRE et CPE ;
- La Protection et la Mise en valeur de l'Environnement ; La réglementation nucléaire.

En matière de réglementation, des projets de lois ont été élaborés pour pallier aux développements socio-économique et technologique que connaît le pays. Ces projets de textes concernent surtout les secteurs des déchets liquides et solides, le littoral, les études d'impact sur l'environnement, la pollution atmosphérique etc.... Cela n'échappe pas à la règle des conflits de compétence des différents acteurs en matière d'environnement, ce qui fait souvent défaut à la promulgation rapide des textes de loi .

En parallèle la loi nationale sur l'eau promulguée en 1995 a permis la création des agences de bassins versants hydrauliques (cf. annexe) qui intègre d'une manière directe la dimension environnementale et vise la protection et une meilleure gestion de l'eau qui devient de plus en plus rare.

D'autres lois sectorielles comme celle de la pêche... sont en cours de promulgation et visent la protection de nos ressources naturelles.

A travers cette stratégie, la politique nationale prévoit la réalisation des actions suivantes :

- Intégrer l'environnement à la prise de décision ;
- Privilégier les questions de population et de santé ;
- Agir d'abord sur les facteurs de pollution ;
- Ménager ses moyens administratifs et faire participer les populations aux actions locales ;
- Evaluer les arbitrages en comparant les coûts et avantages de plusieurs politiques possibles ;
- Agir par la recherche, l'information et la formation ;
- Gérer la demande en eau (limiter les gaspillages d'eau, valoriser les procédés industriels économisant l'eau, agir sur la tarification de l'eau, etc....) ;
- Contrôler la pollution de l'air dans les villes (encourager l'utilisation des technologies propres et d'énergies renouvelables) ;
- Gérer les déchets industriels (Utiliser les technologies propres ; réutiliser le plus possible les matériaux récupérables, favoriser les traitements avec récupération d'énergie, etc) ;
- Pour les sols et le milieu naturel, la stratégie reprend les objectifs de la stratégie du développement forestier établie par le Ministère de l'Agriculture. Elle reprend aussi, les objectifs de la stratégie pour l'amélioration de l'habitat insalubre élaborée par le Secrétariat d'Etat de l'Habitat. Elle prévoit aussi la résolution des problèmes de logement et la protection des sols et le milieu nature.

## **II. Analyse du cadre législatif relatif à la surveillance et le contrôle des risques de pollution d'origine tellurique**

### **II.1. Dispositifs de surveillance, d'inspection et de contrôle sur la pêche**

Les dispositifs réglementaires relatifs au secteur de la pêche s'insèrent dans les textes du dahir portant loi N°1 1-73-255 du 23 Novembre 1973 formant règlement sur la pêche maritime.

**L'article 6** est conçu pour les dispositions et mesures d'interdiction de la pêche.

Les articles **43 ; 44 ; 45 ; 46** relatant aux dispositions à prendre par les organismes, institutions compétentes et tout autres fonctionnaires de l'Etat habilités à cet effet par décret pour

la recherche et la constatation des infractions. D'autres articles de ladite loi se rapportent aux dispositions relatives aux : *infractions* (articles 47 ; 48 ; 49 ; 50 ; 51 ; 52) ; *interdictions* ou amendes (articles 17 ; 18 ; 19 ; 20) pénalisation (article 34)

## II.2. Problématique juridique nationale

La législation marocaine est en général régie par un ensemble de lois relativement anciennes. Ces lois ont été adaptées aux problèmes actuels par des décrets adoptées au cours des vingt dernières années. Cependant, le pays s'est engagé dans un processus d'industrialisation dans le contexte d'une démographie significativement croissante, couplée à l'impact d'un développement technologique qui engendre inévitablement une pollution de plus en plus importante.

L'importance des problèmes posés dans le cadre de la gestion environnementale et l'acuité des dangers qu'ils présentent pour la survie des ressources naturelles rares et limitées telles que l'eau, ainsi que la protection des populations contre les effets néfastes d'un environnement dégradé, ont conduit les autorités marocaines à élaborer un certain nombre de projets de lois et règlements permettant de mettre en place un nouveau cadre juridique général pour une gestion efficace et rationnelle de l'environnement et de servir de base juridique pour amender les lois sectorielles et édicter les décrets d'application.

Par exemple, l'espace côtier ne fait l'objet d'aucune législation spécifique, spécialement conçue pour le sauvegarder. Certes, il existe des dispositions législatives et réglementaires traitant du domaine public maritime, mais ces dispositions sont trop fragmentaires et n'abordent qu'incidemment la gestion de la protection du littoral.

Au niveau de la législation actuelle, il convient de signaler certaines incompatibilités qui entravent l'application et l'adaptation au contexte actuel du développement du pays au regard des nouvelles structures juridiques et le défi industriel et urbanistique en harmonie avec la préservation de l'environnement d'une manière générale. Elles portent principalement sur les points suivants<sup>1</sup>:

- \* Un caractère hétérogène par son contenu des dispositions de nature législative et réglementaire;
- \* La référence aux textes et aux vestiges du protectorat;
- \* des dispositions et mesures a prévenir les risques de pollution très limitées et incomplètes;
- \* L'absence de dispositions spécifiques pour la protection du milieu naturel et de l'environnement en général;
- \* Le délai d'instruction des dossiers incompatibles avec l'encouragement des investissements;
- \* Les dispositions relatives aux infractions non dissuasives.

Le Maroc est doté d'une double façade maritime (atlantique et méditerranéenne) de près de 3500 km de côtes et d'une zone économique exclusive (ZEE) de 200 miles qui confère au Maroc la responsabilité de la gestion des ressources y afférentes. Par ailleurs 98% des échanges du Maroc avec les partenaires étrangers s'effectuent par mer.

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<sup>1</sup> Minst.TP/C.N.E., 1996

### **II.3. Mesures envisagées en vue de contrôler et surveiller l'application de la conformité pour la protection de l'Environnement marin**

Ce secteur fait l'objet de mesures de protection juridiques propres accompagnées d'actions destinées à faire du secteur maritime : **(i)** un pôle de développement ; **(ii)** un réservoir stratégique de ressources alimentaires capable d'assurer de façon permanente la nutrition de la population et **(iii)** une source importante de devises pouvant contribuer tangiblement au rétablissement de l'équilibre de la balance des paiements.

Ces facteurs ont justifié l'élaboration par les pouvoirs publics d'un projet de loi sur la protection de l'Environnement marin. Par ailleurs, dans le cadre d'une stratégie nationale y afférente, des mesures ont été retenues en matière de :

**II.3.1. Evaluation, étude et surveillance maritimes :** Celle ci consiste à renforcer et développer les moyens et programmes nationaux en matière d'évaluation, d'étude et de surveillance de l'environnement marin et de ses ressources et notamment par :

- \* Les études de l'impact des rejets industriels sur le milieu marin et les ressources halieutiques ;
  - La définition des normes nationales régissant les rejets d'origines industrielle et domestique;
  - La surveillance continue de la qualité du milieu marin:
    - étude et surveillance de la pollution par le hydrocarbures et leurs impacts sur les ressources et sur la qualité des sites côtiers (plages, sites touristiques etc...)
    - surveillance sanitaire;
    - surveillance continue de la pollution par les métaux lourds et les pesticides;
- \* La surveillance du phénomène des marrées rouges et étude des conditions du milieu qui favorisent leur développement.
- \* Le renforcement des études de salubrité des milieux confinés (lagunes, bassins portuaires et baies par des études bactériologiques).

**II.3.2. Contrôle de la conformité pour la gestion :** Il s'agit de

- Elaborer un plan d'aménagement du littoral marocain tenant compte de la valeur particulière de cet espace et de la nécessité de préserver les équilibres écologiques dépendant de l'interface terre-mer;

- Prévenir, contrôler et lutter contre les pollutions marines d'origine tellurique (rejets industriels, urbains et agricoles en qualités nocives).

A cet effet, un projet de loi sur le littoral est cours (cf. annexe Projet de loi sur le littoral) (Transmis pour la promulgation)

Le Maroc n'est pas complètement dépourvu d'instruments juridiques sur le littoral. L'appareil législatif et réglementaire existant permet déjà un certain contrôle des constructions, des installations et de certaines formes d'exploitation des ressources littorales. Divers grands textes législatifs, parfois anciens, régissent, par exemple, le domaine public maritime, l'urbanisme, la conservation du patrimoine naturel et culturel, la pêche, la chasse, l'exploitation des forêts, la création de parc nationaux, les établissements dangereux, incommodes ou insalubres. A l'évidence, leurs effets juridiques intéressent également le littoral.

Ainsi, une circulaire du Premier Ministre relative au développement touristique du littoral a été publiée dès 1964 (n° 2007 du 19 juin 1964). Récemment, une importante loi sur l'eau a été adoptée en 1995. Certaines initiatives ont affiché la volonté des pouvoirs publics de renforcer la protection de cet espace et des milieux côtiers.

Un cadre global adapté aux spécificités des territoires littoraux dans lequel toutes les collectivités publiques exercent conjointement leurs responsabilités semble aujourd'hui souhaité par les responsables. Deux collectivités décentralisées paraissent devoir jouer un rôle particulier à cet égard, les communes et les régions. Toutes deux exercent des compétences qui intéressent l'espace littoral. La commune est le cadre institutionnel de mise en œuvre de la planification urbaine ou du développement rural et elle représente la circonscription administrative de base. Quant à la région, il lui revient de coordonner les politiques de développement économique et d'aménagement du territoire.

Les objectifs de l'avant-projet contournent cinq priorités :

- *Préserver les sites littoraux existants ;*
- *Privilégier les activités nécessairement liées au littoral ;*
- *Favoriser l'aménagement des espaces et la mise en valeur des ressources de la mer et du rivage ;*
- *Améliorer les conditions d'accès à la mer et au rivage ainsi que la gestion du domaine public maritime ;*
- *Clarifier les compétences des différentes autorités qui interviennent sur le littoral.*

**L'article 3 :** (...) La loi ajoute des contraintes spécifiques à celles qui découlent des régimes d'autorisations qui les concernent déjà. C'est le cas de constructeurs, les lotisseurs, les exploitants de piscicultures, de camping ou de carrières ou les industriels utilisant des installations classées.

**L'article 9** impose aux schémas directeurs d'aménagement et d'urbanisme ainsi qu'aux plans d'aménagement et de développement de préserver les espaces terrestres et marins, les sites et paysages classés ou inscrits ou caractéristiques du patrimoine et certains milieux naturels fragiles. Il s'agit de transcrire des dispositions protectrices de la loi littoral dans les documents d'urbanisme opposables afin d'en assurer une meilleure protection. Le second alinéa du même article prévoit une liste des catégories d'espaces et milieux à préserver.

**Art. 9** – (...) des mesures de protection, des espaces terrestres et marins, sites et paysages remarquables ou caractéristiques du patrimoine naturel et culturel du littoral et les milieux nécessaires au maintien des équilibres biologiques, sont prévues dans les schémas d'aménagement et d'urbanisme et les plans d'aménagement.

Un décret fixe la liste des catégories d'espaces et milieux à préserver notamment, les dunes et les bandes côtières, les sebkhas et les plages, les forêts et zones boisées côtières, les parties naturelles des estuaires et des caps, les marais, les vasières, les zones humides et milieux temporairement immergés ainsi que les zones de repos, de nidification et de gagnage de l'avifaune.

## **II. 4. Législation et autorisation**

### **II.4.1 Difficultés d'application des textes existants en matière de pollution industrielle et artisanale**

Les dispositions des textes existants ne suffisent pas pour assurer la protection de toutes les eaux contre la pollution pour plusieurs raisons : **(i)** Le secteur des ressources en eau demeure

sans protection et les sanctions prévues pour prévenir les infractions à ces dispositions paraissent actuellement insignifiantes ; **(ii)** L'application de certaines dispositions est difficile dans la mesure où elles interdisent tout rejet enfin, **(iii)** certaines sont inadaptées; c'est le cas des industries polluantes qui échappent au contrôle de l'autorité chargée du suivi de la pollution des ressources en eau. Par ailleurs, en raison de l'absence de normes, il est difficile de fixer le seuil au-delà duquel il y a nuisance. Ces textes juridiques relatifs à la qualité de l'eau (notamment les décrets de 1914 et de 1925) souffrent d'une vétusté et de l'absence de la définition des normes de rejets. Ils sont donc difficilement appliqués en matière de pollution artisanale ou industrielle. Ainsi, en raison de toutes ces insuffisances, la loi Nationale de l'eau a été approuvée, celle-ci contient des dispositions importantes, relatives à la lutte contre la pollution et tenant compte des mutations socio-économiques qu'a connues le pays depuis la promulgation des textes en vigueur.

#### **II.4.2. Perspectives évolutives de la Loi Nationale de l'Eau :**

Au sein de la Loi Nationale de l'Eau, élaborée par le *Conseil Supérieur de l'Eau*, un chapitre est réservé à la conservation et à la protection des eaux, notamment contre la pollution. Ce texte soumet à autorisation tout déversement susceptible de modifier la qualité des eaux. Cette autorisation n'est refusée que si les déversements soient de nature à nuire à la santé de l'homme, de la faune ou de la flore. Cette loi définit également les droits de propriété sur l'eau, les responsabilités et la structure des administrations compétentes en matière de gestion des eaux. D'où l'urgente nécessité de mettre en oeuvre et publier des décrets d'application définissant **(i)** les normes de rejet par type d'installation, **(ii)** les instruments économiques, et autres instruments de gestion de l'eau. Les dispositions doivent être souples afin de permettre aux textes d'application de s'adapter facilement à l'évolution des techniques de production et de dépollution. Cette souplesse sera d'autant plus nécessaire que dans un premier temps les normes de rejet soient assouplies pour tenir compte des charges de dépollution. Ces normes devraient être remaniées en fonction du développement des connaissances sur les déversements et de la capacité de régénération naturelle des eaux.

Le Conseil Supérieur de l'Eau avait préparé à cet effet, un ensemble de recommandations qui figurent actuellement parmi les dispositions de la Loi Nationale de l'Eau à savoir: **(i)** l'établissement des objectifs de qualité par bassin; **(ii)** le renforcement des structures de contrôle et de suivi de la pollution des rejets; **(iii)** l'élaboration et la mise en oeuvre d'une politique contractuelle entre l'Etat et les Industriels pour la réduction des rejets; **(iv)** l'utilisation d'instruments économiques; **(v)** la promulgation des textes réglementaires sur la pollution ainsi que **(vi)** le renforcement des mécanismes de coordination interministérielle pour la mise en oeuvre des décrets d'application relatifs à la protection des eaux contre la pollution.

#### **II.4.3. Projet de Loi sur la protection et la mise en valeur de l'Environnement**

##### **Ce projet de loi :**

- S'intéresse à plusieurs aspects jusqu'ici méconnus ou insuffisamment couverts par la législation environnementale, et qui concernent essentiellement : **(i)** La lutte contre les pollutions et les nuisances; **(ii)** La pollution atmosphérique; **(iii)** Les bruits et les vibrations; **(iv)** les substances et déchets dangereux; **(v)** Les effluents liquides et gazeux; **(vi)** Les normes de qualité de l'environnement; **(vii)** les plans d'urgence; **(viii)** les sanctions pénales des délits écologiques; **(ix)** Les régimes spécifiques de responsabilité.

Ce projet de loi prévoit pour :

- \* **les eaux continentales** : Une obligation des pouvoirs publics de mettre en oeuvre des mesures de prévention et de lutte contre toutes les formes de pollution;
- \* **Les espaces et ressources maritimes** sous souveraineté ou juridiction nationale : Conçoit la prise des mesures pour prévenir et combattre toute forme de pollution (projet de code maritime) ;
- \* **Les installations** : Ce chapitre trace les lignes directrices en matière d'installation : prévention ; lutte contre la pollution, autorisation, obligation du recours à l'Etude d'Impact sur l'Environnement avant toute autorisation pour les installations inscrites dans les textes en vigueur ; Obligation de mise en place de plans d'urgence pour le cas des installations de première classe telle que définie à l'article 2 du dahir du 25 août 1914 ; Régime spécifique de responsabilité transport ou utilisation de substances nocives ou dangereuses, exploitant d'installation de première classe ou toute activité y relative).

#### II.4.4. Règlement du Service de l'Assainissement

La Circulaire du 31 mars 1987, du Ministère d'Etat à l'Intérieur relative au projet de règlement du Service d'assainissement a été établie dans l'objectif d'améliorer la qualité des rejets liquides, par l'introduction de: La définition les eaux résiduaires industrielles (**art 12**) ;La formulation des prescriptions techniques propres aux établissements "industriels"(**art 13**);Conditions de raccordement et (**art 14**) ; admissibilité des eaux résiduaires industrielles aux égouts-vannes (**art 15**) ;Obligations pour la neutralisation ou de traitement préalable des eaux industrielles (**art 16**);Définitions de valeurs limites (mg/l) des substances nocives dans les eaux industrielles (**art 17**);Interdiction de déversement des substances qui affectent le bon fonctionnement du réseau d'assainissement liquide ou qui inhibent l'activité biologique des stations de traitement (**art 18**);Caractéristiques techniques des branchements qui prévoit pour les établissements consommateurs d'eau a des fins industrielles des branchements vannes d'eaux industrielles et domestiques distincts (**art 20**) ;Mesures de contrôle de qualité des eaux résiduaires industrielles (**art 21**).

#### II.4.5. Evaluation et Information (EIE)

##### **PROJET DE LOI RELATIVE AUX ETUDES D'IMPACT SUR L'ENVIRONNEMENT**

**(Art. 1)** : Le document relatif aux Etudes d'Impacts sur l'environnement (EIE) est exigé en vue de l'obtention de toute autorisation administrative de projets d'activités qui comprennent les travaux, d'aménagements ou d'ouvrages industriels agricoles ou commerciaux permettant d'évaluer les effets directs ou indirects à court, moyen et long terme de ces projets sur l'environnement et propose des mesures pour supprimer, atténuer ou compenser les impacts négatifs et d'améliorer les effets positifs du projet sur l'environnement. L'étude d'impact a aussi pour objet d'**informer** la population concernée sur les impacts desdits projets.

**(Art. 3)** Conformément au troisième article dudit projet de loi ; l'étude d'impact sur l'environnement a pour objet de:

1) Evaluer de manière méthodique et préalable, les répercussions éventuelles des activités, de travaux, d'aménagements et d'ouvrages sur l'environnement. *L'évaluation des incidences sur l'environnement porte sur les facteurs suivants :*

- o *l'homme, la faune et la flore*
- o *le sol, l'eau, l'air, le climat et le paysage*
- o *les biens matériels et le patrimoine culturel et*
- o *les interactions entre ces facteurs*



2) Supprimer, d'atténuer ou de compenser leurs incidences négatives;

3) Améliorer leurs impacts positifs sur l'environnement.

**(Art. 6) :** Il est institué auprès de l'autorité gouvernementale chargée de l'environnement, un Comité National des Etudes d'impact sur l'environnement. Ce Comité a pour mission d'examiner les dossiers des études d'impact sur l'environnement et de donner un avis sur la conformité environnementale des projets dans les conditions fixées par voie réglementaire.

D'autres articles de la présente loi traitent des infractions **(Art. 11)** ; des textes pris pour son application sont recherchés et constatés par tout officier de police judiciaire, ainsi que par tout agent assermenté et commissionné à cet effet par l'Administration.

**(Art. 12) :** En cas de non conformité aux dispositions de la présente loi et des textes pris pour son application, l'autorité gouvernementale chargée de l'environnement met en demeure le contrevenant et l'invite à se conformer à la réglementation en vigueur.

#### **II.4.6. Réglementation relative aux établissements classés :**

La législation relative aux établissements classés remonte au dahir du 2 Août 1914. A la lecture des textes actuels régissant ce secteur il ressort certaines lacunes qui entravent l'application et l'adaptation au contexte actuel du développement du pays, au regard des nouvelles structures juridiques et le défi industriel et urbanistique en harmonie avec la préservation de l'environnement et la promotion du développement durable de notre pays.

L'administration des établissements insalubres, incommodes ou dangereux est un rouage fondamental aux niveaux réglementaire et opérationnel pour le contrôle, le suivi et la prévention des pollutions et nuisances d'origine industrielle.

L'étude des législations, des organisations et de modernisation de ce secteur est un stade très avancé.

Les établissements classés sont régis par le Dahir du 25 Août 1914 et plusieurs arrêtés pris pour son application. Cette législation trouve ses justifications dans le souci des pouvoirs publics de préserver l'ordre public dans son acceptation la plus large à savoir la tranquillité, la salubrité et la sécurité, voire l'esthétique publique.

Le Département de l'Equipement a élaboré plusieurs projets de loi et de décrets qui consistent en :

- Un projet de loi relatif aux installations classées ;
- Un Projet de décret pris pour son application et
- Un projet de décret instituant une commission nationale des installations classées.

Les principales dispositions innovatrices introduites par ces projets de loi et de décrets sont les suivantes :

- L'introduction de la notion "Installation classée" au lieu de "Etablissement classé". Cette notion plus globalisante permet d'englober des ensembles moins importants mais dangereux tels par exemple les installations de chauffage ou de réfrigération au sein d'une habitation collective, d'un complexe touristique etc..
- La suppression de la division "en trois classes" remplacée par une division en deux régimes : *Installations soumises à autorisation* et *installations soumises à déclaration* ;
- L'introduction de l'EIE et de l'étude de danger. Cette disposition importante du projet de loi permet l'appréciation préalable, par l'administration, des incidences éventuelles du projet quant à la protection de la santé publique et de la préservation de l'environnement ;
- La séparation des domaines de compétence en matière de législatif et du réglementaire ;
- L'obligation faite aux exploitants de faire vérifier leurs installations périodiquement par un bureau d'étude spécialisé pour s'assurer du bon fonctionnement des installations en matière de sécurité, de l'hygiène et la préservation de l'environnement ;
- L'obligation faite à l'administration de statuer sur les demandes d'autorisation dans un délai raisonnable et compatible avec la législation applicable en vigueur ;
- La réduction du délai d'enquête publique en vue de simplifier les procédures d'octroi d'autorisations ;
- L'obligation faite aux pétitionnaires de présenter une pièce justifiant le dépôt de la demande d'autorisation ou du récépissé de la déclaration à l'occasion de la demande du permis de construire. Cette disposition vise principalement à contraindre le future exploitant à tenir compte des dispositions régissant les installations classées et aussi permet à l'administration d'avoir un regard sur l'ensemble de installations ;
- L'institution d'une redevance annuelle pour certaines installations classées qui font courir des risques particuliers ;
- Le renforcement du contrôle et l'aggravation des sanctions pour respect de la réglementation en vigueur et enfin
- L'institution d'un commission nationale des installations classées, et possibilité de créer des commissions provinciales. Cette disposition s'insère dans le cadre de la politique déclarée en matière de décentralisation et de régionalisation.

Parallèlement à cet arsenal juridique, et dans le cadre de la politique de décentralisation et de régionalisation, l'activité de gestion de ces installations est décentralisée et attribuée aux Directions régionales du ME qui sont, désormais, chargées d'instruire, de lancer les enquêtes publiques nécessaires, de suivre et de contrôler les établissements.

## **II.5. Dispositions relatives aux entreprises réalisant des économies d'eau ou d'énergie ou préservant l'environnement**

### **II.5.1. Dispositions réglementaires**

D'après le Code d'Investissement (Mars 1993), il existe des dispositions concernant les économies d'eau ou d'énergie ou préservant l'environnement, notamment :

\* **art. 32** : qui exonère du droit d'importation ou de la taxe, les produits, les matériels, outillages et biens d'équipement spécifiques destinés à **(i)** la réalisation des économies d'eau ou d'énergie, **(ii)** a l'utilisation des ressources d'énergies nationales autres que celles d'origines pétrolières ou à la préservation de l'environnement lorsqu'ils sont importés ou acquis localement par les entreprises.

\* **art. 32** : prévoit des primes d'équipements à la charge de l'état quand le programme d'investissement comporte des équipements spécifiques destinés à la réalisation d'économie d'eau

ou d'énergie, à l'utilisation des ressources d'énergies nationale autre que celles d'origine pétrolière ou à la préservation de l'environnement.

Pour encourager les industriels à se conformer aux normes admises et entreprendre des actions visant la protection de l'environnement, le législateurs a élaboré un code d'investissement permettant l'exonération de droit d'importation ou de la taxe sur certains équipements destinés à la protection. En effet, la loi N°17-82 promulguée par le dahir 1-82-20 du 17 janvier 1983 prévoit dans son article N°32 l'exonération du droit d'importation ou de taxe sur le produits, les matériels, outillages et bien d'équipement spécifiques destinés à la réalisation d'économie d'eau ou d'énergies, à l'utilisation des ressources d'énergies nationales autres que celles d'origine pétrolière, ou à la préservation de l'environnement lorsqu'ils sont importés ou acquis localement par les entreprises industrielles ou à caractère industriels, nouvelles ou existantes à la date de publication de la présente loi. D'autre part, ces entreprises peuvent, sous réserve de conclure une convention avec l'état, bénéficier, outre les avantages prévus par cette loi, d'équipements à la charge de l'état lorsque leur programme d'investissement comporte des équipements spécifiques destinés à la réalisation d'économie d'eau ou d'énergies, à l'utilisation des ressources d'énergies nationales autres que celles d'origine pétrolière, ou à la préservation de l'environnement.

Par ailleurs, le décret N° 2-82-623 du 17 Janvier 1983 pris pour l'application de cette loi précise dans l'article 19 prime d'équipement à la charge de l'état prévue en faveur des programmes d'investissements comportant des équipements spécifiques destinés à la réalisation d'économie d'eau ou à la préservation de l'environnement. Elle est accordée en prenant en considération les éléments suivants :

- Les investissements spécifiques pour économie d'eau doivent permettre de réaliser en permanence une économie de 30% au moins de la dernière consommation annuelle d'eau connue rapportée au même volume de production. Le taux de la prime est de 20% au montant globale de la l'investissement ;
- Les investissements spécifiques destinés à la préservation de l'environnement doivent permettre la réduction de puissances pour atteindre de manière permanente les normes admises. Le taux de la prime peut varier entre 10 et 20% au maximum du montant global de l'investissement.

Pour les mêmes préoccupations, la loi 1-84 instituant des mesures d'encouragement aux investissements miniers promulguée par le dahir N°1-86-1 du 29 Décembre 1986 fait bénéficier les entreprises minières du concours financier de l'état aux dépenses d'investissements destinés à la réalisation d'économie d'eau et à la préservation de l'environnement. En effet, l'article 27 précise que les entreprises minières ou à caractère minier qui procèdent à l'exploitation des substances minérales et dont le programme d'investissement aboutit à la création d'au moins 50 emplois de personnel stable, bénéficient de l'infrastructure extérieure aux canaux de la mine.

Le concours de l'état est également accordé dans les mêmes conditions, aux dépenses d'investissements destinés à la réalisation d'économie d'eau et à la préservation de l'environnement. Ce concours financier de l'état est fixé à 50% du total des dépenses susvisés sans que ce concours puisse dépasser 15% du montant de l'investissement projeté.

Les articles N°19 du décret N°2-88-54 du 22 septembre 1989 pris pour l'application de la loi N°1-84, instituant des mesures d'encouragements aux investissements miniers promulgués par dahir N°1-86-1 du 29 décembre 1986, précise que le concours de l'état aux dépenses afférentes

aux équipements spécifiques destinés à la réalisation d'économie d'eau et à la préservation de l'environnement est accordé en considérant les éléments suivants :

- Les investissements spécifiques pour économie d'eau doivent permettre de réaliser en permanence une économie de 30% au moins de la consommation annuelle moyenne d'eau connue rapportée au même volume de production ;
- Les investissements spécifiques destinés à la préservation de l'environnement doivent permettre la réduction des nuisances pour atteindre d'une manière permanente les normes en vigueur.

## **II.5.2. Contrôle de la conformité dans les entreprises industrielles :**

Ce volet a été examiné dans les chapitres relatifs au :

- Développement industriel écologiquement durable ;
- Audits des industries situées dans l'axe Casablanca Mohammedia, contrôle volontaire dans le cadre de partenariat entre les différents secteurs publics et privés concernés ;
- Loi 10-95 nationale de l'eau , instituant la police de l'eau;
- Fonds de dépollution industrielle comme système d'incitation et de mise à niveau , qui stipule le mise en place de procédures d'autocontrôle de qualité et de mise en conformité conformément au prescriptions du cahier de charge établie par l'entreprise avant de financer sont projet de dépollution;
- Activités du Service de Normalisation industrielle Marocaine du Ministère de l'Industrie, du Commerce, de l'Energie et des mines (SIMA) et application de la norme NM. ISO 14000 ;
- Missions du département de contrôle et contentieux du département de l'Environnement du MATHUE<sup>1</sup> ;

### ***Inspections et contrôle de la conformité des activités nécessitant un permis :***

#### ***En cas de plainte :***

En cas de plainte les autorités chargées de la protection de l'environnement, avisent les autorités locales et dépêchent une mission d'enquête en vue d'établir dans un premier lieu le diagnostic préliminaire de l'état des lieux lorsqu'il s'agit d'un cas de pollution par les rejets ou de mortalités d'organismes, ..., contrôle de(ou des ) l'installation(s) industrielle(s), observations et suivi de toutes les étapes du cycle de production de l'unité polluante. Des prélèvements en fonction de la nature de la source de pollution ou de nuisance, sont effectués et des analyses de nuisances engendrées par l'activité de l'unité incriminée (Analyse des eaux résiduaires ; du pulpe au niveau des digues de décantations ; analyse des émissions atmosphériques ; des stériles, des délaissés... ; enquête auprès des travailleurs, du public avoisinant l'unité et recherche de tout autre renseignement s'avérant utile pour le compte de l'enquête). Si les résultats montrent que les nuisances engendrées par l'unité en question dépassent les normes nationales en vigueur ou les projets de normes en cours d'élaboration, un procès verbal sanctionné par un rapport technique détaillé sont élaborés et envoyées aux différents acteurs concernés (Autorités locales représentées par la commission provinciales ou préfectorale technique et l'entreprise en question), en vue de se conformer aux dispositions qui s'imposent.

Le rapport comprend l'état des lieux, la situation de la zone sinistrée, le schéma des différentes sources de pollution internes et externes de l'unité, les résultats des analyses ainsi qu'un plan d'action élaboré par le Département de l'Environnement. Le rapport et présenté au sein

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<sup>1</sup> Ministère de l'Aménagement du Territoire, de l'urbanisme de l'habitat et de l'Environnement

du comité technique provincial regroupant en plus des autorités locales, tous les acteurs concernés par cette problématique y compris l'unité en question; dans un cadre de concertation. Ainsi un planning de réalisation des mesures réduction des nuisances constatées est élaboré suivant un timing en commun accord avec la Direction de ladite unité.

## **II.6. Cadre Institutionnel régissant le contrôle, l'évaluation et l'information environnementale :**

### **II.6.1. Systèmes de surveillance et de contrôle existants**

Les systèmes de surveillance et de contrôle existant ou Laboratoires servent actuellement en majorité à la collecte des données et au traitement des informations. Certaines de ces institutions se sont regroupées en réseaux mis en place par les différents partenaires gouvernementaux pour mieux cerner l'état de l'environnement et l'étendue des menaces qui pèsent sur lui.

Il existe actuellement au Maroc plusieurs réseaux de surveillance de la qualité des eaux continentales et marines dont notamment :

- Le réseau de surveillance par bassin versant de la Direction générale de l'hydraulique ( tous les bassins versant du Maroc) et du Département de l'Environnement (Bassin du Sebou, Oum Er Rbia) ;
- Le réseau de surveillance des eaux destinées à la consommation humaine de l'Office Nationale de l'Eau Potable qui couvre tout le territoire;
- Le Réseau de surveillance de la qualité microbiologique des zones côtières de l'Institut National d'Hygiène relevant du Ministère de la Santé publique;
- Le réseau de surveillance des eaux d'irrigation et de la qualité des sols de l'Administration du Génie Rural du Ministère de l'Agriculture ;
- Le réseau de surveillance de la salubrité du Littoral (Institut National de recherche halieutique) ;
- Le réseau National de surveillance continue de la pollution de la Méditerranée MED POL (Institut National d'Hygiène "INH", Institut National de Recherches Halieutiques "INRH", Département de l'Environnement "MATUHE/DE", Faculté des sciences d'Oujda "FSO", Ecole Mohammedia des Ingénieurs "EMI", Centre National des Etudes Scientifiques et Techniques de l'Energie Nucléaire "CNESTEN", Office National de l'Eau Potable "ONEP", Laboratoire National de la Communauté Urbaine de Tétouan "LCUT")
- Le Réseau de surveillance de la qualité hygiénique des plages (Office d'exploitation des ports du Ministère de l'Équipement) ;
- Pour ce qui est de la qualité de l'air (pollution de fond), Le Département de l'air du Laboratoire National de l'Environnement couvre certaines zones dans le cadre des études localisées dans le temps et l'espace telles que celles de Rabat et de Casablanca ;
- Le Laboratoire de l'air du LPEE mène aussi des programmes de surveillance de la qualité de l'environnement, à la demande ;
- Le Laboratoire du CNESTEN et du Centre National de Radioprotection qui interviennent dans l'évaluation, le suivi et le contrôle des émanations radioactives et de déchets nucléaires.

Les réseaux existants ne sont ni exhaustifs ni complets. Sur le plan d'exhaustivité, d'autres paramètres, telles que les nuisances sonores, ne sont surveillés par aucune structure administrative à ce jour. Pour ce qui est de la performance et de la conformité des réseaux, la plupart ne sont que partiellement opérationnels et ont été conçus et gérés de manière à répondre aux besoins sectoriels de suivi et de planification. A ce titre, ils ne permettent pas d'assurer une

surveillance intégrée à même de satisfaire aux exigences en informations, données et indicateurs environnementaux.

### **II.6.3. Laboratoire National de l'Environnement**

*Le Laboratoire National de l'Environnement a pour mission de surveiller et contrôler la qualité de l'environnement, d'identifier, hiérarchiser et suivre les tendances des indicateurs de mesures et promouvoir la recherche en collaboration avec les services internes et autres opérateurs dans le secteur de l'environnement couplé au développement.*

Ses principales activités se résument comme suit :

- Identifier, caractériser et hiérarchiser les atteintes environnementales sous les effets des pressions naturelles (catastrophes naturelles...) ou humaines (pollution, travaux d'aménagements...);
- Etablir les cadres de coopération avec les laboratoires nationaux relevant d'autres départements dans les domaines de la surveillance et la recherche environnementale;
- Organiser, harmoniser et Normaliser les méthodes d'analyses environnementales (Eau, Air, Sol, Déchets) ;
- Participer au suivi des tendances des indicateurs environnementaux en mettant en place et en utilisant les systèmes de télédétection et télémesures desdits indicateurs ;
- Développer les programmes de modélisation spatio-temporels (Systèmes de télédétection et télémesures) permettant la constitution de séries chronologiques et spatiales sur les mesures de qualité de l'environnement ;
- Aider à la résolution des conflits environnementaux sur l'usage de l'espace et sa dégradation, ou en matière de la conformité vis à vis des analyses techniques des paramètres indicateurs de pollution réalisées dans les études préalables ;
- Assurer la mise en place d'un système de surveillance de la conformité analytique par l'exécution des exercices d'intercalibration analytique pour la mise à niveau et l'acquisition de l'accréditation en matière d'analyse environnementale (de l'analyse élémentaire à l'audit environnemental) ;
  
- Assister les services scientifiques et techniques du DE et ceux des autres institutions nationales pour le renforcement de leur programme d'observation, d'études environnementales ;
- Analyser la faisabilité et la pertinence des programmes de surveillance et de contrôle de la qualité d'environnement existants;
- Développer la coopération (conventions et partenariat) avec les institutions nationales et étrangères pour le renforcement des capacités en matières de surveillance et de contrôle;
- Contribuer à l'assistance et le conseil des acteurs concernés par les problèmes de l'environnement. ;

### **II.6.3. Division du Contrôle et Contentieux relevant du Département de l'Environnement**

Cette structure nouvellement créée lors de la réorganisation en l'an 2000, du Département de l'Environnement a pour rôle de réaliser des inspections et des contrôle d'application de la législation, d'instruire des requêtes-contentieux et d'apporter conseil et assistance aux tiers. Ces enquêtes et inspection sont souvent renforcées par les équipes du Laboratoire National de l'Environnement.

#### Missions et activités :

- Nouer les contacts nécessaires avec les corps constitués (Inspection Civile, Police, Gendarmerie, Services des Fraudes,...) ;
- Analyser et sérier les actions de contrôle possibles, établir les modes et procédures d'interventions ;
- Constituer au sein du DE/MATHUE, des cadres assermentés pour contrôler et entreprendre des actions conjointes avec d'autres organismes ;
- Consulter pour toute action de contrôle les services du DE/MATHUE concernés ;
- Consulter les banques de données environnementales et les services sur les sujet relatifs à la pollution objet de la requête ;
- Demander au besoin un rapport technique circonstancié ;
- Informer la Direction de la Surveillance et la prévention des risques (du DE/MATHUE°de toute requête et contentieux, témoignage d'atteintes à l'environnement ;
- Saisir les parties incriminées pour explications à donner ou actions à mener ;
- Assurer le suivi de toute requête.

S'agissant de l'inspection et du contrôle, un projet de rapport de contrôle a été également élaboré par le Service de Contrôle du Département de l'Environnement. Ce rapport porte sur la matières premières, les procédés de fabrication, les produits fabriqués, le type de traitement des eaux usées, l'environnement général de l'établissement (population, milieu récepteur : Eau, Air, Sol Rejets liquides, Rejets solides, Fréquences des mesures, Normes appliquées, Installation de traitement des effluents gazeux et...).

## II.7. Promotion et contrôle de la conformité

### II.7.1. Normes environnementales pour le respect de la conformité

Si l'eau est régie par la loi 10-95 sur l'eau (août 1995) beaucoup de domaines restent lacunaires. Pour pallier cette situation, une série de projets de textes ont été élaborés. Il s'agit de :

- Projet de loi sur la protection et la mise en valeur de l'environnement (cadre général) ;
- Projets de loi et de décret relatif aux études d'impact sur l'environnement (approche préventive) ;
- Projets de loi et de décret relatif à la protection de l'atmosphère contre la pollution (approche préventive et curative) ;
- Projet de loi sur la gestion des déchets et leur élimination (approche préventive et curative).
- Projet de loi sur le littoral etc....

#### II.7.1.1. Secteurs concernés :

S'agissant de la normalisation et le contrôle de la conformité des secteurs de l'eau, de l'air et des déchets, la situation peut être résumée comme suit <sup>1</sup>:

- **L'eau** : la loi 10-95 sur l'eau est la base législative de la normalisation dans ce domaine. Deux décrets pris pour son application prévoient l'adoption de normes ;
  - Le premier décret relatif aux normes de qualité des eaux et à l'inventaire du degré de pollution des eaux est déjà adopté. Toutefois, ses deux projets d'arrêtés conjoints

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<sup>1</sup> cf. Annexe (Etat d'avancement des projets de normes en matière d'environnement)

(Equiperment et Environnement) fixant les normes de qualité des eaux de surface ainsi que les normes des qualités des eaux selon leur usage ne sont pas encore adoptées ;

- Le deuxième décret relatif au déversement, écoulement, rejet, dépôt direct ou indirect dans les eaux superficielles ou souterraines n'est pas encore adopté. Ses è projets d'arrêtés conjoints ne sont pas encore adaptés non plus.
- **L'air** : Il n'y a pas de loi en vigueur consacrée à la protection de l'atmosphère. Pour combler cette insuffisance, un projet de loi et un projet de décret réglementant la pollution de l'aur ont été élaborés et transmis au SGG. Le décret comprend 2 annexes, l'une fixe les valeurs limites générales et de rejet et l'autre fixe les normes de qualité de l'air. Un projet d'arrêté spécifique au secteur cimentier est lui aussi élaboré.
- **Déchets** : Quant aux déchets, un projet de loi portant sur leur gestion et leur élimination vient d'être établi et transmis au SGG. Ses prescriptions techniques ne sont pas encore élaborées.

#### II.7.1.4. Approche incitative:

Bien que la norme revête le caractère d'une réglementation technique précise, son fondement demeure largement politique et économique. Par ailleurs s'il y a lieu de rappeler l'existence des ruptures dans l'acheminement permettant de conduire à l'adoption de normes environnementales. En conséquence dans le contexte du Maroc, l'introduction de ces normes pourrait être envisagée de deux façons :

- **Réglementaire** : L'activation du processus de l'adoption des projets de textes déjà transmis au SGG. Ces projets ont été préparés selon une approche participative.

Dans ces conditions, un moratoire de quelques années adoucira le passage de la situation actuelle vers une situation "normalisée". Etant donnée qu'il bénéficie déjà d'une base législative, le milieu aquatique pourrait se doter de normes à brève échéance.

- **Consensuelle** : L'adoption d'une telle démarche passe par le recours à
  - *La convention* : technique utilisée auparavant avec quelques grandes entreprises mais dont le contenu doit être revu pour y introduire l'obligation du respect des normes ainsi que le suivi des engagements pris ;
  - *Le contrat de Branche* : où l'administration et la branche d'activité concernée se trouvent liés par des obligations précises. Les moyens, bien que limités du (Fonds de dépollution) FODEP, peuvent être utilisés à cette fin. D'autres moyens peuvent être cherchés du côté des différentes administrations et des collectivités locales ;
  - *La Commission interministérielle d'investissement* : cette Commission est instituée par la circulaire n°4/98 en date du 28/09/1998 du Premier Ministre. Elle vise à assurer un traitement rapide et efficace des dossiers d'investissement. L'institution de cette Commission est basée sur la loi cadre 18-95 formant charte de l'investissement (du 08/11/95). Cette Commission peut accorder, moyennant des contrats particuliers, pour les programmes d'investissement dont le montant est supérieur ou égal à 500.000.000 DH, des avantages aux projets qui visent, entre autres, à contribuer à la protection de l'environnement. Le recours à cette commission en tant instrument présente des avantages certains, cependant, son apport reste limité , ne serait-ce que pour le montant d'investissement considéré.



L'approche réglementaire doit être renforcée par des mesures incitatives ; à cet effet, la mise en place d'instruments économiques serait d'une grande utilité. Ces instruments sont axés sur : (i) les avantages fiscaux et (ii) la création de Fonds spécifiques.<sup>1</sup>

## II.7.2. Activités du Comité Normes et Standard (CNS) relevant du CNE<sup>2</sup>

1°- **Stratégie** : Basée sur le principe d'émission qui consiste à définir les valeurs limites des différents paramètres indicateurs de la pollution en fonction des rendements des techniques de traitements disponibles à un coût économique acceptable à l'échelle nationale.

### 1°.1. Groupe "EAU" :

1.1.1. Normes de qualité selon les usages : Elle se basent surtout sur l'élaboration des objectifs de qualité fixant les différentes exigences auxquelles un milieu doit satisfaire et notamment la définition des paramètres valables pour l'eau selon les différents usages : (i) La production de l'eau potable ;(ii) L'irrigation ; (iii) Pisciculture et (iv) Eaux de surface.

#### 1.1.2. Valeurs limites de rejets des eaux usées :

- o Valeurs limites générales des rejets directs et indirects :

Le projet de Valeurs Limites générales des rejets directs et Indirects a été conçu en (i) se basant sur la documentation étrangère internationale, (ii) isant comme objectif de qualité les eaux piscicoles ; (ii) caractérisant chaque paramètre indicateur de pollution (exp P,N les seuls indicateurs du Phénomène d'eutrophisation) ; fixant (iv) le degré de toxicité de l'élément, sa biodégradation, et son impact sur le milieu récepteur ; (v) les quantités de ces polluants dans les rejets industriels et (vi) La facilité de la technique de récupération de certains éléments polluant.

- o Valeurs limites sectorielles de rejets :

Ces valeurs limites concernent les différentes branches d'industrie. Le comité CNS a défini à cet effet, les termes de référence relatant les étapes d'élaboration desdites valeurs limites (cf. tableau ci dessous) :

#### **Termes de références relatifs à l'élaboration des exigences minimales requises pour le déversement des eaux usées**

1°- Etablir le diagnostic de la branche industrielle : Inventaire des unités de la branche industrielle ;Choix d'une ou de deux unités représentatives ; Evaluation de leur charge polluante et de son impact sur les milieux récepteurs ; Reproduction et diffusion du document auprès des départements ressources ; Préparation des réunions de travail

#### **2°- Etude de faisabilité de la dépollution et minimisation de la charge polluante par l'optimisation du processus de fabrication :**

Inventaire des technologies de traitement disponibles et applicables au Maroc ; Choix de la technique de traitement des eaux de la branche avec justification technique et financière ; Proposition de mesures appropriées afin de réduire les flux polluants et économiser l'eau et ou l'énergie ; Reproduction et diffusion du document auprès des départements ressources ; Préparation des réunions de travail

3°- **Elaboration du projet de valeurs limites de rejet** : Recueil et synthèse des normes étrangère ; Elaboration du projet de valeurs limites de rejet ; Reproduction et diffusion du rapport auprès des départements ressources ; **Préparation des réunions de travail.**

4-Présentation et discussion du projet de valeurs limites avec les représentants des associations industrielles concernées : Reproduction et diffusion du rapport auprès des départements ressources et des industriels concernés ; Préparation des réunions de travail

<sup>1</sup> L'expérience tunisienne fut fondée sur les deux approches réglementaire et incitative.

<sup>2</sup> CNE : Conseil National de l'Environnement

- Des projets de valeurs limites de rejets ont été établies respectivement pour : *(i)* les nouvelles et anciennes unités sucrières ; *(ii)* levureries ; *(iii)* Huileries ; *(iv)* Tanneries ; *(v)* raffineries de pétrole ; *(vi)* Unités de traitement de surface ; *(vii)* unités de traitement des minerais ; *(viii)* Unité de traitement de la cellulose.
- **1.2.Goupe de l’Air**
  - *Projet de norme de qualité de l’air* : Dans ce projet, les valeurs proposées concernent les polluants majeurs de l’atmosphère tels que les matières particulaires en suspension, le dioxyde de soufre, le dioxyde d’azote, le monoxyde de carbone et les métaux lourds.
  - *Projet de valeurs limites générales des rejets dans l’atmosphère* : Les substances polluantes ont été réparties en quatre groupes selon leurs formes physico-chimique, en plus d’un cinquième groupe comportant toutes les substances cancérigènes : les poussières ; les substances inorganiques essentiellement sous forme de poussières ; les substances organiques sous forme de gaz, de vapeurs ou de particules et les substances cancérigènes.
  - *Projet de valeurs limites sectorielles des rejets dans l’atmosphère* : Les secteurs prioritaires considérés par ce projet sont : les cimenteries ; Les raffineries de pétrole ; les transports ; les Centrales thermiques ; la chimie et parachimie.

## **II.8. Instruments de mise en conformité**

### **II.8.1. Normalisation nationale de l’Industrie (Mise en conformité en amont)**

#### **II.8.1. Système National de Normalisation :**

Le Maroc était l’un des premiers pays en développement à s’intéresser à la normalisation. C’est ainsi que les pouvoirs publics ont mis en place les bases juridiques de cette discipline dès les années 1970. La gestion des activités liées à la normalisation au niveau national a été confiée aux organes suivants :

- **Le Conseil Supérieur Interministériel de la qualité et de la Productivité (CSIQP)** qui définit la politique normative industrielle et donne un avis sur les projets de normes en vue de leur homologation. Le Ministère délégué auprès du Premier Ministre chargé des Affaires Générales du Gouvernement assure la présidence du CSIQP et le secrétariat est assuré par le Service de la Normalisation Industrielle Marocaine (SNIMA) ;
- **Le Service de Normalisation Industrielle Marocaine (SNIMA)** qui assure la coordination des travaux de normalisation à l’échelon national et veille notamment à mettre à la disposition des comités de normalisation la documentation technique nécessaire pour l’élaboration de projets de normes marocaines. Le SNIMA est chargé également de la diffusion de l’information normative industrielle et de l’édition et de la vente des normes marocaines et des documents à caractère normatif
- **Les comités techniques de normalisation** sont chargés d’élaborer des normes. Ils sont institués, en fonction des besoins exprimés par les différents opérateurs économiques, auprès des départements ministériels directement concernés par les produits à normaliser.

Ces structures ont été renforcées par la création en 1989 de la Direction de la Normalisation et de la Promotion de la Qualité au sein du Ministère chargé de l'Industrie, dont l'une des principales missions consiste à favoriser toutes les initiatives dans ce domaine et à créer l'environnement qui leur garantirait toutes les chances de succès.

**II.8.1.2. Bilan des réalisations :** Les efforts entrepris jusqu'à présent ont permis de développer une prise de conscience de l'intérêt de la normalisation et d'assurer une adhésion des principaux opérateurs économiques concernés (Administration, industriels, laboratoires...). Plus d'une soixantaine de comités techniques d'élaboration de normes regroupant les représentants de ces opérateurs ont été institués. Le bilan global des travaux de ces comités se chiffre actuellement à environ 2000 normes industrielles homologuées et une centaine de normes en cours d'homologation. Le bilan par secteur industriel se présente comme suit :

Secteur Industriel	Normes homologuées	Normes en cour d'homologation
Chimie et parachimie	470	60
Textiles et cuirs	200	
mécanique, Métallurgie et électricité	380	80
Agro-alimentaire	195	
Batimnst et travaux publics	370	100

## **II.8.2. Système d'Assurance Qualité**

**I.8.2.1. Assurance qualité de la production :** Concernés par le phénomène de la mondialisation des échanges commerciaux, les entreprises doivent êtres en mesures de satisfaire aux exigences et règles internationales relatives à la qualité. Dans cet environnement, le champ d'action de l'activité normative s'est étendu vers le management de la qualité dans l'organisation interne de l'entreprise à travers l'engagement de toutes les composantes de celle-ci durant toutes les étapes de la production.

C'est l'objectif de la série des normes ISO 9000 qui fournissent des lignes directrices pour la gestion de la qualité et présentent les différents modèles d'assurance de la qualité dont le choix et la sélection dépendent du type d'activité de l'entreprise et des exigences de ses partenaires. Le comité technique d'assurance qualité a adopté les normes ISO 9000 en tant que normes marocaines (NM ISO 9000) afin de les mettre à la disposition des entreprises nationales pour répondre aux exigences de leurs partenaires. Le comité en question a également adopté une série de normes relatives à l'audit des systèmes qualité et à l'établissement de manuels qualité.

**II.8.2.2. Assurance qualité environnement :** Le respect de l'environnement et du cadre de vie sont aujourd'hui exprimés par tous les acteurs socio-économiques. La prise de conscience grandissante a nécessité la préservation des conditions d'un développement durable, traduits par un besoin en règles de bonnes pratiques acceptées par tous.

Par ailleurs, le comité technique concerné a adopté les normes internationales de la série ISO 14000 relatives au management environnemental qui définissent les lignes directrices pour la maîtrise des impacts de l'activité de l'entreprise sur l'environnement ainsi que les techniques de gestion et de réalisation de l'audit environnemental.

Actuellement, le bilan se chiffre à 58 normes homologuées, portant sur la qualité de l'air et les eaux d'alimentation humaine.

### **II.8.2.3. Santé et sécurité :**

L'impact principal de la normalisation en matière de sécurité réside dans toute mesure préventive pouvant intervenir au stade de la conception, de production ou d'utilisation d'un produit, machine ou appareil. Une norme de sécurité peut aider un fabricant à concevoir et fabriquer ses produits, un distributeur à sélectionner une marchandise, un consommateur à motiver une décision d'acte, voire à utiliser, entretenir ou réparer l'objet acquis.

Par ailleurs, dans le but de protéger le consommateur, le champ des normes a été étendu pour concerner le secteur des produits para-pharmaceutiques et les équipements médicaux. Le recours à la normalisation dans ce secteur permet d'assainir le marché des produits et articles para-pharmaceutiques et médico-techniques, caractérisé par une certaine anarchie pouvant générer des répercussions négatives sur la santé des citoyens. Le bilan de normes homologuées dans ces secteurs se chiffre à 43. Certaines dispositions normatives sont devenues obligatoires à partir du 14 juin 1998.

#### ***PARTICIPATION AUX TRAVAUX DE L'ISO :***

Membre permanent de l'ISO, le Maroc représenté par le SNIMA a participé aux journées d'étude organisées par le comité de l'ISO pour la politique en matière de consommation (COPOLCO) et aux réunions du comité de l'ISO pour le développement (DECO).

#### ***PARTICIPATION AUX TRAVAUX DE L'AIDMO :***

Partant de la contribution de la normalisation dans l'édification des groupements économiques régionaux par l'unification des spécifications techniques des produits fabriqués au sein de ces groupements, le SNIMA participe aux travaux du comité consultatif supérieur de la normalisation relevant de l'Organisation Arabe pour le Développement Industriel et Minier (AIDMO). Il contribue aussi à la mise en place des structures nécessaires pour le développement de la normalisation dans ces régions et donne son avis sur les normes et documents techniques élaborés par ces organisations.

### **II.8.3. Certification des systèmes de management**

C'est une reconnaissance par une tierce partie indépendante de l'efficacité du système de management mis en place par l'entreprise suivant un référentiel déterminé. La certification selon la norme internationale (série ISO 9000) permet de s'assurer que l'entreprise gère la qualité suivant des procédures préétablies garantissant la régularité de la production. La certification selon la norme internationale (série ISO 14000) permet de s'assurer que l'entreprise gère les aspects liés à l'environnement suivant des procédures bien définies et maîtrise l'impact de ses activités sur l'environnement.

*Au Maroc, ces normes, éditées par l'organisation Internationale de la Normalisation (ISO) ont été adoptées en tant que normes marocaines (NM ISO 9000) et (NM ISO 14 000) et constituent la base du système marocain de certification des entreprises.*

L'acte de certifier une entreprise marocaine repose sur les éléments suivants :

- Une évaluation par des auditeurs spécialisés ;
- Une certification proprement dite, par laquelle le Ministère du Commerce et de l'Industrie atteste la conformité du système de gestion de l'entreprise au référentiel choisi.

Les entreprises ayant déjà opté pour la certification de leur système qualité NM ISO 9000 opèrent dans les domaines des peintures, des algues maritimes et production d'Agar Agar alimentaire et bactériologique, les tubes soudés en acier et la fabrication de pistons, chemises et axes de pistons. La première entreprise marocaine certifiée NM ISO 14 000 opère dans le domaine des composantes électroniques.

### **III. Plan d'action pour un développement industriel écologiquement durable "DIED" et respect de la conformité**

Ce plan d'action élaboré par le Département de l'Industrie, du commerce, de l'Energie et des Mines, fait suite à un diagnostic sur les aspects liés au développement industriel et à la protection de l'environnement : le contexte international, la stratégie nationale pour la protection de l'environnement, la situation de la pollution industrielle au Maroc ainsi que les volets d'un programme de développement industriel écologiquement durable.

Les composantes relatant les aspects de surveillance de la conformité figurent dans :

- **Le contexte** : Globalisation des marchés et de labélisation du commerce international, la protection de l'environnement s'imposent de plus en plus aux produits marocains. Elle doit être perçue non pas comme une contrainte, mais plutôt comme un axe stratégique de développement et de promotion des produits.
- **Les fiches projet** : Cadre législatifs, aspects techniques, financiers.
- **Les objectifs** : Préservation des ressources naturelles ; Préparation des industriels marocains aux exigences du marché international pour le respect de l'environnement et aider les PMI à se conformer aux nouvelles normes de rejets et informer et sensibiliser sur l'importance de la prévention de la pollution.

#### **III.1. Législation et réglementation :**

Malgré l'importance des textes existants au Maroc, ils présentent plusieurs lacunes qui les rendent partiellement inadaptés à une protection efficace de l'environnement. La plus part des textes sont anciens et ne correspondent pas aux réalités économiques et sociales du Maroc contemporain, ainsi qu'aux approches écologiques actuelles.

Compte tenu de ce blocage juridique, les autorités compétentes ont cherché à mettre en chantier plusieurs projets de lois ou de décrets à portée globale ou sectorielle. D'autre part, plusieurs départements ont mis en place des services chargés de la protection de l'environnement dans les secteurs de leur tutelle. Le Département de l'Environnement, quant à lui est chargé principalement de :

- Mettre en place une politique nationale de protection de l'environnement centrée sur les enjeux clés actuels, notamment en permettant la modernisation des établissements et la production moindre des rejets ;
- Coordonner l'action des départements ministériels en matière de protection de l'environnement en vue d'assumer une complémentarité entre les différents secteurs d'activité.

L'arsenal juridique marocain en matière d'environnement tel qu'il a été mentionné auparavant, s'est renforcé par le Loi 10-95 sur l'eau, projet de loi sur la pollution atmosphérique, projet de normes de rejets solides, liquides et gazeux...). Ces dispositions permettront de résoudre de nombreux problèmes environnementaux liés aux installations classées.

Le plan d'action du projet DIED préconise que le projet de loi actualisant le Dahir de 1914 doit compléter cette législation régissant les établissements classés (cf. Paragraphe II.4.6. plus haut) :

Dans ce projet existent des dispositions relatives à :

- La promotion de l'autocontrôle ; la concertation entre l'administration et exploitants pour établir les règles pour un contrôle efficace de ces installations ;
- Le partage de la responsabilité entre l'administration et l'exploitant.

Les tendances de ces principes se traduisent par :

- l'engagement de l'exploitant par la signature d'un cahier de charges établi par l'administration ;
- La définition des règles d'un contrôle périodique à posteriori par l'administration sur la base d'un cahier des charges ;
- La promotion de l'autocontrôle ;
- La flexibilité par l'actualisation de ces cahiers des charges pour l'ajout d'autres règles devenues nécessaires. Dans ce cadre, une commission nationale comportant des représentants des différentes administrations concernées et de la profession sera chargée d'élaborer un cahier des charges global comportant des règles générales d'hygiène, de sécurité et de protection de l'environnement auxquelles doivent se conformer toutes les installations. Quant à l'exploitant, il s'engage par écrit à respecter les cahiers des charges dont le suivi sera effectué par la mise en place d'un contrôle périodique par l'Administration permettant d'attirer son attention sur les problèmes posés et des solutions pratiques aux problèmes persistants. Il sera donc amené à effectuer des autocontrôles périodiques pour s'assurer de la conformité de son installation avec ses engagements vis à vis de l'Administration (analogie faite avec le système de certification de l'entreprise en matière de qualité).

### **Rôle du Service de Normalisation des Industrielle marocaine (SNIMA)**

**L'auto-contrôle et audits environnementaux :** Dans ce domaine, la stratégie juridique proposée favorise l'émergence d'une nouvelle catégorie d'instruments économiques environnementaux ayant été appliqués avec succès, notamment en Europe, à savoir les audits environnementaux volontaires, ou "Eco-audits", à l'attention des grandes entreprises exerçant une activité industrielle (*Audits Casablanca Mohammedia*).

**Agrément des bureaux de contrôle environnemental :** Les organismes d'inspection environnementaux seront définis en tenant compte des attributions de compétences au niveau local et national, du contexte légal et administratif et des ressources financières et humaines disponibles. L'inspection et le contrôle sont pratiquement les seuls moyens qui permettent de veiller au respect des normes en vigueur.

### **III.2. Accréditation audits et inspections**

Les pouvoirs publics peuvent agréer des bureaux et des laboratoires de contrôle environnemental des installations industrielles. Une fois agréées, ces bureaux et laboratoires peuvent jouer un rôle important dans l'application des textes et le respect des normes environnementales adoptées.

Ils peuvent réaliser des audits environnementaux, des inspections de conformité aux normes, l'expertise de caractérisation des rejets... Ils doivent disposer de ressources minimales pour mettre en place une inspection globale d'une installation, matériel de mesures et d'analyses etc...).

### ***Enquêtes réalisées sur la situation des rejets industriels :***

- Identification et caractérisation de rejets industriels du Maroc ;
  - Surveillance et contrôles des rejets des bassins versant de Sebou et d'Oum Er Rbia ;
  - Audit d'une dizaine d'industries de Mohammedia –Casablanca ;
  - Rejets des villes de Safi et El Jadida ;
  - Gestion des déchets solides industriels spéciaux (Etude de faisabilité d'une décharge contrôlée à Casablanca).
- **Les auditeurs et Inspecteurs :** L'instauration et l'application de normes, de procédures de contrôle et d'inspection suppose l'agrément d'inspecteurs, d'auditeurs environnementaux et d'experts. Pour ce faire, des programmes de formation spécialisée et pratique devraient être prévus dans le cadre de la coopération internationale pour un transfert de savoir-faire;
- **Les gestionnaires et les cadres techniques des entreprises :** des campagnes de formations d'information et de sensibilisation, ont été organisées au profit des décideurs et des cadres techniques des différents secteurs industriels.

### ***III.3. Utilisation de technologies propres***

Récemment il y eu création d'un Centre marocain de Production propre (CMPP) Ce centre réunit les supports de sensibilisation, d'éducation et d'information ainsi que la documentation technique sur :

- Les techniques de prévention de la pollution industrielle ;
- Les technologies propres ;
- Les techniques de traitement, de recyclage et de réduction des rejets ;
- Les normes et lois en vigueur.

Le centre dispose de toute la logistique (Moyens informatiques...) pour permettre les liaisons avec les bases de données nationales et internationales sur l'environnement et la banque de données de l'ONUDI sur les technologies propres.

Le Centre est à la disposition de tous les acteurs concernés par la protection de l'environnement, les pouvoirs publics, les industriels, les universitaires, les associations professionnelles et les organisations non gouvernementales ;

Le centre diffuse des informations techniques, économiques et financières sur l'utilisation des techniques de prévention et de réduction de la pollution industrielle. Il pourra fournir également le conseil technique dans ce domaines, aux petites et moyennes entreprises.

Suite à la demande des professionnels ou d'études sur le terrain, le centre prépare une base de données de fiches projets de protection de l'environnement pour les pouvoirs publics et les bailleurs de fonds internationaux.

De même, récemment il y eu création d'un Centre d'Informations sur les Energies Durables (CIED) au sein du département de l'Environnement, en vue d'activer la promotion, l'innovation et l'échange du savoir faire en matière d'utilisation des énergie durables.

#### **III.4. Stratégie de développement**

L'adhésion du Maroc à l'Organisation Mondiale du Commerce, la signature de l'accord de libre échange avec l'Union Européenne et la diversification des échanges avec d'autres pays à économies fortement compétitives sous-entendent un engagement du Maroc à prendre des mesures d'accompagnement nécessaires pour se préparer aux défis de la concurrence internationale et garantir à son économie toutes les chances de réussite.

Afin d'affronter cette situation le Maroc se prépare pour engager de nouvelles mesures visant la mise en place d'un système de normalisation, de certification et d'accréditation conformes aux exigences internationales. Dans ce cadre, le Conseil Supérieur Interministériel de la Qualité et de la Productivité (CSIP) a procédé à la restructuration du système normatif marocain en vue d'évoluer vers un système plus cohérent et adapté au nouvel environnement commercial.

La nouvelle architecture du système de normalisation, de certification et d'accréditation et les projets de textes nécessaires pour sa mise en œuvre ont été définis sur la base de l'expérience acquise dans ce domaine, des pratiques des autres pays et des exigences du commerce international.

La proposition relative au nouveau système touche les différents aspects liés à la normalisation et à la qualité et vise à doter le Maroc d'un système global, cohérent et reconnaissable. Elle prévoit l'élargissement du CSQP actuel aux représentants du secteur privé et de consommateurs et la création d'un comité marocain d'accréditation pour se charger de l'accréditation et de l'évaluation des compétences techniques des organismes de certification, d'essais et de qualification ainsi que de la certification des auditeurs. L'élaboration des normes marocaines et l'attribution des certificats de conformité à ces normes seront confiées à l'Institut Marocain de Normalisation (IMANOR).

Les dispositions des projets de textes du système proposé introduisent des éléments de souplesse dans la procédure d'élaboration et d'homologation des normes, et permettent l'implication du secteur privé dans le processus d'élaboration des normes, de certification de la conformité, de l'accréditation des organismes d'évaluation de la conformité et de l'audit des systèmes qualité.







#### IV. Partenariat pour la mise en conformité (Industrie et Environnement)

(Plan de dépollution industrielle de l'axe Mohammedia-Casablanca).

Des efforts de prévention de contrôle et de lutte contre la pollution ont permis suivant des portées volontaires et participatives à 10 principales industries de l'axe Casablanca-Mohammedia<sup>1</sup> d'établir une convention engageant ces entreprises, le DE et le Département du Commerce, de l'Industrie, (lors de la constitution du CRE de la région Economique Centre en 1996), à agir ensemble pour la dépollution et l'amélioration de l'environnement de cette Région. Un plan d'action définissant les moyens et mesures pour passer à l'action a été élaboré, en concertation avec les industriels et les autorités locales de la Région. Ces efforts de prévention (surveillance, contrôle audit...) et de lutte contre la pollution, aux quels les différents partenaires ont souscrit, vont de paire avec la mise à niveau des entreprises marocaines face à la concurrence et aux exigences environnementales qu'imposent les accords d'association avec l'Union Européenne et l'OMC.

L'étude pilote de dépollution industrielle de l'axe Mohammedia Casablanca a aboutit à l'élaboration d'un plan d'action régional et de plans d'actions spécifiques sur lesquels se sont engagées volontairement les dix entreprises. En concertation avec tous les concernés.

##### **Objectifs de l'Etude :**

- Aider les industriels à se préparer en prévision de la réglementation actuellement en cours d'élaboration en matière de pollution industrielle ;
- Préparer des plans d'actions spécifiques à chaque unité à court et à long terme en concertation avec les entreprises et les acteurs concernés, définissant les moyens technologiques et les montages financiers et les moyens réglementaires et institutionnels nécessaires pour prévenir et réduire les émissions polluantes dans les régions ;
- Préparer un plan organisationnel définissant les rôles et les responsabilités de chacun en matière de contrôle et de la surveillance de la pollution industrielle ;
- Proposer un plan de suivi pour évaluer les actions visant la réduction de la pollution industrielle dans la région, et une charte pour s'assurer de la mise en œuvre et du suivi du système de réduction de la pollution.

Cette étude pilote a été réalisée en deux étapes :

**1°- AUDITS :** Le volontariat a porté sur l'amélioration des rejets et la participation à la réduction de la charge polluante de l'axe Mohammedia –Casablanca. Les audits avaient pour but de prévenir et de contrôler la pollution dans les unités

1

ENTREPRISE	ACTIVITE
CENTRALE LAITIERE	Produits laitiers
INDUSTRIES MAROCAINES MODERNES (IMM) <sup>o</sup>	Détergents, savons, shmpoings, serviettes hygiéniques et couches bé
LEUSIEUR CRISTAL	Huiles alimentaires et savons de ménage
MAFER	Traitement de surface
PORT DE MOHAMMEDIA	Transit de prduits pétroliers
CENTRALE THERMIQUE DE MOHAMMEDIA (ONE)	Electricité
PECHINEY-MMA	Articles ménagers et emballages
SOCIETE CHERIFIENNE DES ENGRAIS ET DES PRODUITS CHIMIQUES (SCE)	Engrais, acide sulfurique et autres produits chimiques
SOCIETE NATIONALE D'ELECTROLYSE ET DE PETROCHIMIE (SNEP)	PVC, soude caustique, chlore et eau de javel.
TENNERIE MOHAMMEDIA	Cuir

industrielles, en évaluant les charges polluantes (gazeux, liquides et solides) de chaque usine et les risques pour l'environnement et en identifiant les mesures à prendre au sein de chaque unité industrielle pour réduire ces charges polluantes en vue de leur mise en conformité.

**2°- PLANIFICATION CONCERTÉE :** Participation et implication de tous les concernés : industries auditées, autorités locales, élus, ministères, associations professionnelles et organisation non-gouvernementales (ONGs) pour définir :

- Les priorités d'actions tant au niveau des unités industrielles qu'au niveau local, régional et national ;
- Mettre en œuvre ces actions dans le cadre de conventions d'engagement signés par les parties concernées.

Dans cet esprit, les dix entreprises se sont engagées à :

1°- Prévenir la pollution. A cet effet, elles ont créé chacune son propre département environnement pour diminuer leur consommation d'eau ou de produits chimiques, et mieux gérer leurs rejets afin de mieux protéger l'environnement. Ces actions convergent vers l'un des objectifs de la Stratégie Nationale qui consiste à stabiliser les charges polluantes de rejets jusqu'en 2005 et

2°- Réduire leurs rejets en investissant financièrement, en vue de contribuer à la concrétisation des objectifs à long terme de la stratégie Nationale pour la Protection de l'Environnement et le Développement durable.

**PLAN D'ACTION :** Il comprend deux catégories d'actions :

- *Projets incontournables :* essentiellement pour contrôler la pollution par des réalisations concrètes à moyen ou long terme comme le pré-traitement des eaux résiduaires ou le traitement et l'élimination des déchets toxiques ;
- *Alternatives aux comportements actuels :* améliorations ponctuelles à plus court terme visant à réduire les risques d'accident et les quantités de déchets produits tout en améliorant la productivité des entreprises et la sécurité des ouvriers grâce à la mise en œuvre de mesures de prévention de la pollution.

## **V. Moyens d'incitation volontaires pour la mise à niveau et respect de la conformité "Fonds de dépollution industrielle (FODEP)"**

### **V.1. 1<sup>ère</sup> ligne du Fonds de Dépollution industrielle : FODEP I**

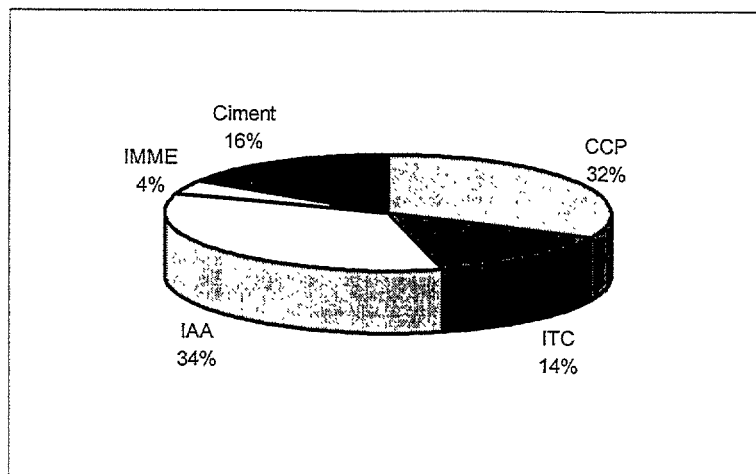
Le développement industriel que connaît le Maroc a causé des pressions sur les ressources naturelles et des dommages à l'environnement qui deviennent de plus en plus des facteurs limitant pour un développement durable du pays. En effet, en absence d'un arsenal réglementaire exhaustif et clair, les milieux naturels sont devenus des déversoirs de différents types de rejets : liquides, gazeux et solides sans aucun traitement préalable.

Cette situation qui ne peut perdurer pour différentes raisons : la corrélation incontestée entre la protection de l'environnement et le développement durable, l'ouverture sur les marchés internationaux la nécessité d'une mise à niveau pour

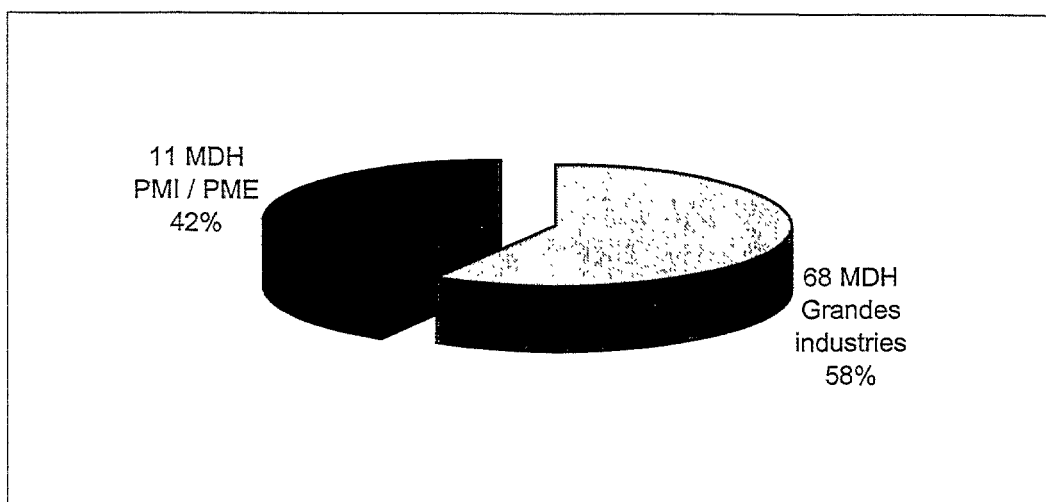
devenir compétitif. **C'est dans cet objectif que le Fonds de dépollution a été mis en place**

### Etat d'avancement du FODEP I :

Les demandes de financement sollicitées au FODEP sont au nombre de 50 qui se répartissent selon les secteurs d'activités suivants : **(i)** Chimie Parachimie : 16 ; **(ii)** Textile et cuir : 7 ; **(iii)** Agro alimentaire : 17 ; **(iv)** Mécanique ; **(v)** métallurgique et électrique : 2 ; **(vi)** Ciment : 8 ( Cf tableau 1 et figure1)

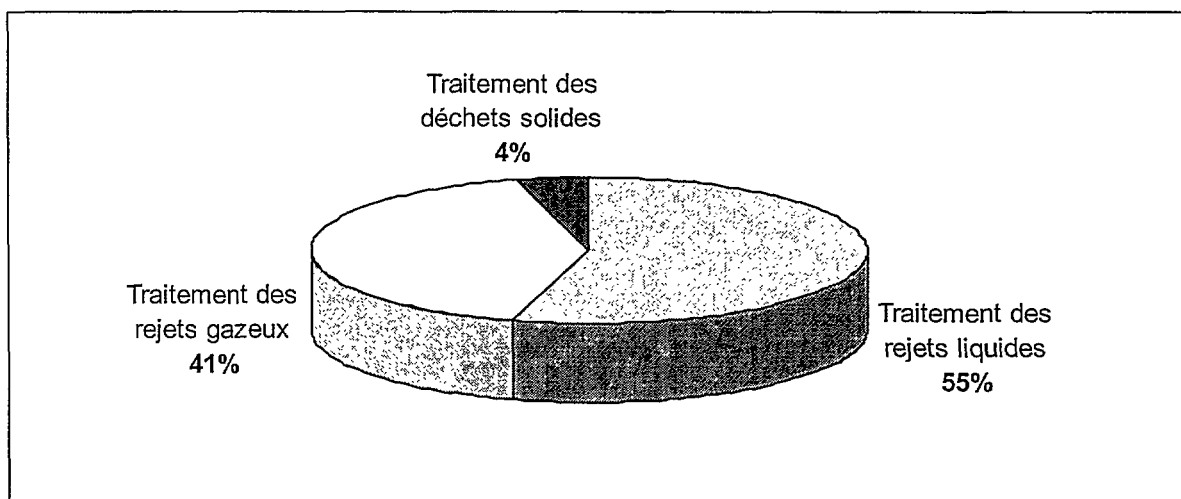


*Figure 1*

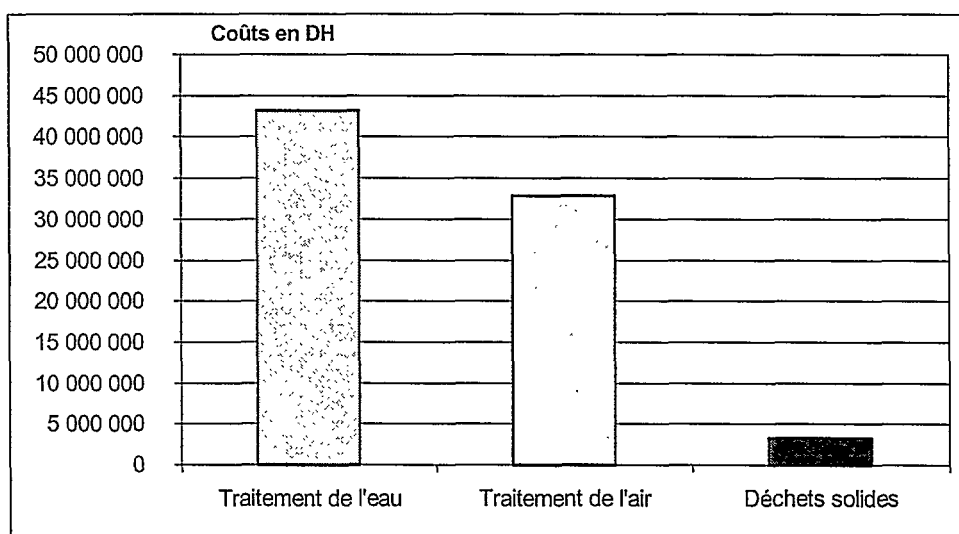


*Figure 2 : Répartition des unités bénéficiaires du FODEP selon la taille*

Parmi les projets agréés, 5 concernent les rejets liquides, 5 concernent les rejets gazeux et 2 les déchets. Les montants accordés pour ces 3 types de projets sont respectivement de 43 209 939,72 Dh, 32 918 501,50 Dh et 3 314 628,00 Dh. (Cf graphe)



*Figure N°3 : Répartition des montants accordés par type de projets*



**\* Projets de traitement des rejets liquides :**

Différents procédés de traitement de rejets liquides sont financés par le FODEP : du plus simple (Bassin d'évaporation) au plus complexe (Réacteur anaérobie). Le choix du procédé est souvent guidé par la nature et le volume des rejets, la taille de l'unité industrielle, les disponibilités de terrain, les compétences techniques du personnel de l'unité et les coûts de mise en place et d'exploitation des procédés de traitement ( Cf Tableau 4).

**Tableau N°4: Projets de traitement des rejets liquides**

Unité	Caractéristiques de l'entreprise	Caractérisation des rejets	Procédé de traitement	Coût (Dh)
(Huilerie)	Grande unité Compétences techniques disponibles	DBO : 6300 mg/l DCO 16 800 mg/l Débit : 1000 m <sup>3</sup> /j	Traitement Physico-chimique et biologique par boues activées + filtre presse <b>Objectif :</b> DBO inférieure à 100mg/l DCO inférieure à 500 mg/l	1 310 1905 dont 10 481 524 finar par FODEP
(Conserverie)	Petite unité Compétences techniques limitées	DBO 16 000 mg/l Débit: 40m <sup>3</sup> /j (3 mois d'activité)	Bassins d'évaporation <b>Objectif :</b> Rejets liquides nuls	631 750 dont 505 400 financé FODEP
(Huilerie)	Petite unité Compétences techniques limitées	Margines DBO 70 000 mg/l Débit : 34 m <sup>3</sup> /j	Bassins d'évaporation <b>Objectif :</b> Rejets liquides nuls	1 413 541,50 dont 1 130 833,20 fina par FODEP
(Distillerie)	Grande unité Compétences techniques disponibles	DBO : 40 000 mg/l DCO: 70 000mg/l Débit : 20 m <sup>3</sup> /h	Réacteur anaérobie + lagunages aéré et facultatif <b>Objectif :</b> DBO : 25 mg/l DCO : 376mg/l	21 986 178,30 dont 17 588 942,64 financés par FOE
(Textile)	Unité de taille moyenne Compétences techniques disponibles	DBO : 350 mg/l DCO : 1200 mg/l Débit : 500 m <sup>3</sup> /j	Réacteurs à base de coke + Epaississeur + filtre presse <b>Objectif :</b> DBO inférieur à 100mg/l DCO inférieure à 500 mg/l	6 076 564,92 dont 4 861 251,94 financés par FOE

#### \* Projets de traitement des rejets gazeux :

Concernant ces projets qui sont au nombre de 5, ce sont principalement les cimenteries (4) qui ont fait appel au FODEP pour la réduction des rejets de poussières liés au procédé de fabrication du ciment.

Ces projets consistent soit à la rénovation du filtre existants soit à son remplacement par un système plus performant (filtre à manches au lieu d'un électrofiltre) ou encore son extension par la mise en place de nouveaux champs.

Le 5<sup>ème</sup> projet, a été financé au profit d'une unité de détergent dont le procédé de fabrication génère d'importants rejets de poussière. Le projet consiste à la mise en place de cyclones sec et humide pour la réduction et la récupération des rejets de poudre fine.

**Tableau 5: Projets de traitement des rejets gazeux**

Unité	Caractéristiques de l'entreprise	Caractérisation et des rejets	Procédé de traitement et caractéristiques	Coût (Dh)
Cimenterie	Grande unité Compétences techniques disponibles.	Poussières :347mg/Nm3	Electrofiltre et Modernisation de 2 Ch et ajout d'un 3ème S de filtration :5796m² <b>Objectif : &lt; 50mg/Nm3</b>	8 203 524,00 dont 80% : 6 562 819,20
Cimenterie	Grande unité Compétences techniques disponibles.	NOx : 1400 mg/Nm3 SO2 : <25 mg/Nm3 Poussières:110mg/Nm3	Installation d'un 4 <sup>ème</sup> Champ de l'électrofiltre existant S de filtration :57m² <b>Objectif : 50mg/Nm3</b>	1 997 160,00 dont 80% : 1 597 728,00
Cimenterie	Unité de taille moyenne Compétences techniques disponibles.	<u>Emissions :</u> Poussières :1200 mg/m3	4 Filtres (F) à manches F1=12000m3/h et 64 M S de filtration : 88,2 m² F2=6000m3/h et 35M S de filtration : 63m² F3 & F4=17100 m3/h et 100 M S de filtration : 178,13m² <b>Objectif : 20mg/Nm3</b>	3 047 087,50 dont 80% : 2 437 670,00
Cimenterie	Grande unité Compétences techniques disponibles	NOx : 653g/Nm3 SO2 : <25g/Nm3 Poussières: 200mg/Nm3	Filtre à manches + Ventilateur C du filtre :212300Nm3/h S de filtration : 5654 m² et 2430 M <b>Objectif : &lt;10mg/Nm3</b>	17 047 150,00 dont 60% : 10 228 290,00
Cimenterie	Grande unité Compétences techniques disponibles	NOx : 0,92 mg/Nm3 SO2 : 0,1 mg/Nm3 Poussières: 790mg/Nm3	Cyclones sec et humide C = 22 827 Nm3/h Cs= 18 320m3/h à 105°C Ch= 36 640 m3/h à105°C <b>Objectif : 20mg/Nm3</b>	2 623 580,00 dont 80% : 2 098 864,00

**\* Projets de traitement des déchets :**

Le FODEP a financé 2 projets pour le traitement de déchets :

\* Traitement et valorisation interne de sables contaminés d'une fonderie par la mise en place d'une unité de régénération thermique et d'un filtre pour le traitement des rejets gazeux.

\* Traitement et déshydratation des boues issues du traitement des rejets liquides d'une unité de céramique par la mise en place d'un filtre presse.

**Tableau N°6 : Projets de traitement des rejets solides**

Unité	Caractéristiques de l'entreprise	Caractérisation des rejets	Procédé de traitement et caractéristiques	Coût (Dh)
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<b>Fonderies</b>	Unité de taille moyenne Compétences techniques disponibles.	Sables contaminés : 2000t/an	Installation de régénération thermique et d'un filtre à manche Débit : 500 kg/h T° de régénération : 700 à 900°C <b>Objectif : Récupération et réutilisation de 2000t/an de sables.</b>	3 005 800 d 2 404 641 financé par FODEP
<b>Céramique</b>	Unité de taille moyenne Compétences techniques disponibles.	Boues MES : 400 g/kg DBO : 140 mg/kg DCO : 8260 mg/kg	<b>Filtre presse</b> Nbre de plateaux : 80 Diamètre : 750mm Nombre de toiles : 200 Capacité du filtre : 900 l. <b>Objectif : Déshydratation des boues et réutilisation jusqu'à 50% de gallettes.</b>	308 828 dont 247 062,40 financé par FODEP

## 2 – Suivi des projets :

Un bulletin périodique de suivi des émissions, a été demandé pour tous les projets réalisés afin de préparer à la notification du certificat de conformité qui permettra de valider les projets en relation avec les objectifs qui leur ont été assignés.

Dès la reprise de service du Conseiller Technique Permanent (CTP), les modalités de préparation à la notification du certificat de conformité seront proposées par le CTP en concertation avec la Cellule Projet et un calendrier pour les visites de validation finale des projets réalisés sera arrêté.

## 3 - Etat d'avancement des projets en cours de finalisation :

L'état d'avancement des projets en cours de finalisation se résume dans le tableau ci-dessous :

### Projets en cours de finalisation

Branche d'activité	Objectif du projet	Nature du projet	Coût du projet en Dh	Localisation (Ville / ZI)	Observations
IAA	Traitement de l'eau	Aval	13 126 159,,50	Kénitra	Actualisation de l'étude en cours
ITC	Traitement de l'eau	Ava	2 556 185	Casablanca	En cours d'examen
IAA	Traitement de l'eau	Aval	14 000 000	Kénitra	Complément d'information en cours
CPC	Traitement de l'eau	Aval	6 270 000	Marrakech	Complément d'information en cours de préparation
Ciment	Traitement de la pollution de l'air	Aval	12 624 798	Agadir	en cours d'examen
ITC	Traitement de l'eau	Aval	4 691 000	El Jadida	Complément d'information en cours de préparation
IAA	Traitement de l'eau	Aval	875 000	El Jadida	Complément d'information en cours de préparation
Ciment	Traitement de la pollution de l'air	Aval	28 004 446	Oujda	en cours d'examen
IAA	Traitement des déchets	Intégré	20 073 602	TanTan	Accord par la KfW sous réserve quelques précisions
IAA	Traitement de l'eau	Aval	3 520 000	SETTAT	En cours d'examen
IAA	Traitement des déchets	Aval	6 923 587,30	SETTAT	En cours d'examen

IAA	Traitement de l'eau	Aval	12 702 716	SIDI KACEM	En cours d'examen
IAA	Traitement de l'eau	Aval	14 183 726	KENITRA	En cours d'examen
	Total		139 551 219,80		
	Total x 80 %		111 640 975,8		

- Promotion du FODEP :

Quatre ateliers régionaux ( Rabat-Kénitra, Fès-Meknès, Béni Melle-Khouribga et Tanger-Tétouen) ont été organisés conformément au programme. Les autres ateliers programmés auront lieu après la reprise de service du CTP.

- Etudes sectorielles :

Des études sont prévues pour définir les zones prioritaires en matière de dépollution, les techniques adaptées au contexte national et les investissements.

- Audits environnementaux :

Des études sectorielles sont prévues pour l'identification des secteurs qui nécessiteraient des audits pour une meilleure définition de leurs problèmes environnementaux.

## V.2. 2<sup>ème</sup> ligne du Fonds de Dépollution industrielle : FODEP II

Le Département de l'Environnement procède actuellement avec les partenaires (KfW, Caisse Centrale de Garantie, Groupement professionnel des Banques du Maroc et le Département des finances) aux négociations des contrats pour la mise en place d'une 2<sup>ème</sup> ligne du FODEP. Le montant accordé par la KfW pour cette 2<sup>ème</sup> ligne qui se focalisera sur les petites et moyennes industries, s'élève à 20 millions de DM.

### 1 - Convention séparée :

- **Entreprises éligibles au FODEP II :** Selon les consultations menées avec les départements concernés, divers critères peuvent être utilisés.

- Selon la Confédération Générales des Entreprises du Maroc :

- Selon le Département de l'Industrie : Nombre de salariés inférieurs à 200.

- Conformément à la charte des PME/PMI (Ministère de l'Economie sociale, des petites et moyennes entreprises et de l'artisanat chargé des affaires générales du gouvernement) :

- **Projets éligibles au FODEP II:**

- Les projets d'économie d'énergie ne figurent pas dans le projet de convention, aussi, vu la conjoncture actuelle caractérisée par la flambée des coûts d'énergie, ce genre de projets doit être fortement encouragé à l'instar de nombreux pays.
- L'évaluation de différents projets soumis au FODEP, a montré que le critère de rentabilité doit être pris en compte dans l'examen des projets afin d'éviter d'encourager des projets présentant des avantages économiques au détriment de projets proprement environnementaux visés par le FODEP. Dans ce cadre, le taux de rentabilité devra être fixé avec les différents partenaires
- Les unités nouvelles de traitement et de recyclage des déchets sont proposées pour être éligibles au FODEP II moyennant une adaptation des conditions de financement. En effet, lors de l'exécution du FODEP I, de nombreux promoteurs ont demandé des subventions du FODEP pour la mise en place d'unités nouvelles de traitement et de recyclage des déchets, qui constituent certes un investissement rentable mais elles permettent également en absence d'une réglementation rigoureuse de prendre en charge les déchets de plusieurs unités industrielles.

**\* Procédure :**

- Le délai d'étude des dossiers par la Cellule FODEP, depuis la présentation des dossiers complets de demande de financement jusqu'à l'accord de principe et non l'accord définitif, ne dépassera pas 1 mois.
- L'octroi de l'accord définitif par le Département de l'Environnement, nécessite l'avis favorable de la banque. Ainsi, si la banque donne son avis sur l'étude financière dans un délai de 45 jours maximum, le délai total pour la notification de l'accord définitif d'un projet de dépollution depuis le dépôt du dossier complet est alors de 3 mois.

**Indicateurs de l'accomplissement des objectifs :** Afin de répondre à cette recommandation, une procédure d'auto contrôle sera exigée à l'industriel avec établissement de rapports périodiques à soumettre à la Cellule FODEP sur une durée de 5 ans après la mise en service du projet de dépollution.

**CONCLUSION**

L'arsenal Juridique national est actuellement en déphasage par rapport aux développements urbanistique et industriel. Toutefois des efforts de révision des textes réglementaires sont déployés pour protéger l'environnement en général et sauvegarder ses ressources terrestres et marines, tout en assurant un développement durable.

S'agissant des efforts déployés par les instances nationale et internationale en matière d'environnement, il faut souligner que ce le Maroc affiche une ferme volonté politique de coopération en vue de protéger et gérer l'environnement et participe activement à la mise en oeuvre de codification du droit international de l'environnement. Cette volonté se manifeste par la présence d'un département chargé de l'environnement, d'un Conseil National de l'Environnement, et l'adhésion à certains accords et conventions internationaux. Cependant, de grandes lacunes relatives à la protection de l'environnement en général, et du milieu marin de la Méditerranée et de sa frange littorale se présentent, notamment: l'aménagement inapproprié de la zone côtière par manque d'une planification et d'une gestion voulue de celle-ci; l'inadéquation et l'application peu effective des législations nationales; l'indigence des structures institutionnelles et une insuffisance des ressources

humaines nationales allouées à ces types d'activités; enfin l'absence d'une mobilisation de ressources financières suffisantes et d'un engagement politique clair pour résoudre les problèmes existants.

**SLOVENIA**

**SLOVENIA**

**COMPLIANCE AND ENFORCEMENT  
OF REGULATIONS FOR LAND-BASED  
POLLUTION CONTROL  
COUNTRY REPORT**

JANUARY 2001

**ŽBONA BORIS**

Inspector of Environment  
Counsellor to the Head inspector

## INTRODUCTION

Slovenia is a rather small country, with approximately 2 million inhabitants and covering a surface of 20,251 km<sup>2</sup>. As far as the level of industrial development is concerned, Slovenia is a medium-developed country with mainly small industries and family-run manufacturing. Tourism is very important for its economy: winter tourism inland and summer tourism both inland and in the coastal region.

Slovenia is predominantly a continental state, with most of its territory being part of the eastern Alps (Julian, Karavan, and Karnik Alps), while the coastal strip, facing the Bay of Trieste, is very small. On the coast, Slovenia has borders with Italy in the north and Croatia in the south. The total length of the coastline is 46 km. The permanent population of the coastal region accounts for some 4 per cent of the total population, while the average yearly number of overnight stays is about 1.7 million. The summer tourist season lasts from May to September, peaking in July and August.

In the coastal strip, land use is the subject of intensive competition, especially among housing, tourism, industry and marine activities. Three towns have developed on the coast: Koper, Piran and Izola, and there are a number of smaller settlements and tourist facilities between them, so the entire coast is actually one large urban area. Piran, with the neighbouring Portoroz, is a highly developed tourist centre, Koper is the industrial, business and harbour centre, and Izola is well known for its long tradition in the fishing industry (cannery). Land-use conflicts are most pronounced in Koper, and regard industry, harbour activities and housing. Owing to excellent road and railroad connections inland, the harbour of Koper has become the most important export-import harbour of central Europe, and new activities are constantly being developed in the industrial zone.

The principal sources of pollution of the Slovenian coastal sea are surface flows, numerous urban wastewater outlets and one submarine outfall. The rivers Soča, Rižana and Dragonja which flow towards the Adriatic sea receive untreated urban and industrial waste waters and thus represent a significant source of pollution by suspended and dissolved matter that affects chemical and biological processes in the coastal sea. The estimated yearly input from land-based sources amounts to 7,002 t of suspended matter, 1,075 t of nitrogen, 134 t of phosphorus, 17 t of lead, 344 t of zinc, 2 t of chromium, and 1.5 t of cadmium. The largest individual polluter of the coastal sea is the river Rižana which is the source of both microbiological pollution and pollution by toxic and persistent organic matter. It receives the domestic waste waters of the town of Koper after primary treatment, as well as untreated waste waters of most industries located in the urban area of Koper. The quantities and composition of the waste waters discharged by various industries are unknown, so it is difficult to estimate the funds needed to resolve the problem of industrial waste waters.

In summer, high temperatures facilitate decomposition of the organic matter, leading to anoxic conditions and causing mass mortality among marine organisms.

To improve quality of the surface and underground waters the Decree of operational programme of discharging and cleaning of waste waters including programme of projects of water welfare (Ur. List RS, No 94/99) was carried out. According to these decree on the Soča River Basin three new Waste Water Treatment Plants (Bovec– 6500 PE, Kobarid – 4100 PE, Most na Soči – 1000 PE) and severages are in constriction, while two WWTP are in reconstruction (Tolmin – 10.000 PE denitrification, Ajdovščina – 20.00 PE - enlargement of biological cleaning step).

The biggest problem still remains the municipality of Nova Gorica where no WWTP is in operation. New WWTP is planned to be constructed with capacity of 45.000 PE till the end of 2004.

Construction of a sewerage network to cover larger areas of the towns of Koper, Izola and Piran, with plants for biological treatment of domestic waste waters together with appropriate submarine outfalls, and treatment of industrial waste waters to the level of urban waste waters at origin, removing all toxic and hazardous wastes, would considerably improve the state of the coastal sea of Slovenia, especially with regard to the sanitary quality. On the coastal area reconstruction of sewerage and WWTP Koper – 50.000 PE, Izola – 30.000 PE and Piran – 30.000 PE are planned to be realised till the end of year 2005.

As a result of Slovenia's active participation in the MEDPOL programme since 1976, data are available on both sea water quality and on the quantities of pollutants discharged into the sea from land – based sources over many years.



## MONITORING OF WATER QUALITY

On the National level the Ministry of Environment and Physical Planning (MEPP) is responsible for all aspects of environmental monitoring conducted by Nature Protection Agency (NPA) and the Hydro meteorological Institute (HMI). According to the Environmental Protection Act (EPA) the MEPP adopted a regulation to authorise of parties responsible for carrying out environmental monitoring. The extent of the monitoring is nation wide and comprehensive and in this context Slovenia fulfils its obligations to the Helsinki, Basel and Barcelona Conventions in making available monitoring data on the state of the environment in Slovenia.



The elements of Water Quality Monitoring Programme conducted by the HMI are as following: Surface Water, Ground water & Water Springs, Marine Waters, Water Quality Monitoring Data.

The results show that in the eastern part of Slovenia, agricultural activities directly influence the quality of water. Some pesticide concentrations are high and also an increasing concentration of potassium and zinc occurs. In western part of Slovenia, the underground water quality is relatively good. The water from most aquifers is still suitable for drinking, according to European standards. Pollution is concentrated in zones in which important industrial and agricultural activities or landfills are located.

## SURFACE WATERS

In table 1 there are estimations for water quality of the rivers flowing down to the Adriatic sea concerning content of heavy metals.

River Soča with its affluence flows out on the Italian side, while rivers Rižana and Dragonja flow out on the Slovenian side.

**Table 1**

River	Control point	Estimation						
		1992	1993	1994	1995	1996	1997	1998
SOČA	Trenta	1-2	1-2	1-2	1-2	1-(2)	-	-
	Trnovo	(1)-2	1-2	1-2	1-2	1-2	-	-
	Tolmin	2	2	(1) - 2	2	2	2	2
	Plave	2	2-3	2-3	2-4	2-4	2	2-(3)
	Solkan	2-3	2-3	2-3	2-3	2-4	2	2-(3)
KORITNICA	Kal	3	2	2	1-(2)	2	2	1-2
TOLMINKA	Tolmin	2	2	2	2	2	2	2
IDRIJCA	Podroteja	2	2	2	2	2	2	2-(3)
	Hotešk	3	2-3	2-3	2/3	2/4	2/4	2-(3)
KRAŠKI IZVIR	Podroteja	-	2	1-2	2	2	2	2
KOREN	Nova Gorica	4	4	4	4	4	4	4
VIPAVA	Vipava	2	2	2	2	2-(3)	2	2
	Miren	2-3	2-3	2-3	2-3	(2)-3	(2)-3	2-3
HUBELJ	Izvir Ajdovščina	-	1-2	2	2/3	2	2	1-2
		3	3	3-(4)	3-4	3-4	3-(4)	3-(4)
NADIŽA	Potoki	1-2	1-2	2	2	1-2	(1)-2	(1)-2
NOTRANJSKA REKA	Topolc	3	(2)-3	2-3	2-3	2-3	2-3	(2)-3
	Cerkvenikov mlin	2-3	2-(3)	2-3	2-(3)	2-(3)	2-3	2-(3)
	Matavun	2-3	2-(3)	2-3	2-(3)	2	2	2-(3)
RIŽANA	Izvir	2-3	2	2-(3)	2	2-3	2-(3)	2
	Dekani	4	3	2-3	2-3	(2)-3	3-4	(2)-3
DRAGONJA	Podkaštel	2	2	2	2	2-(3)	2	2

International co-operation on water management in Slovenia being well established, in particular through several bilateral agreements with neighbouring countries, and joined to the ECE Convention on the Protection and Use of Trans boundary Watercourses and International Lakes and Convention on Co-operation for the protection and Sustainable Use of the River Danube. These instruments are particularly relevant frameworks for settling possible future disputes. Eutrophication and alga bloom problems in the Adriatic Sea remain acute. The

ongoing Slovenian Coastal Management Programme will be efficient only if coastal management programmes are also developed by Italy and Croatia.

## WASTE WATERS

Monitoring of waste waters, drinking waters and bathing waters are carried out also on the local level: Institutions of Public Health (IPH) in Koper and Nova Gorica are responsible for obligatory monitoring of waste water samples. Some of the results are listed in table 2.

Table 2

IPH Nova Gorica	Samples	Out of limits	% out of limits
Number of waste water Samples	393	117	30
Obligatory monitoring (29 companies)	174	60	34
Others	119	27	23
WWTP (10 plants)	100	0	0
IPH Koper	Samples	Out of limits	% out of limits
Number of waste water Samples	242	92	38
Obligatory monitoring (35 companies)	185	82	30
Others	57	10	18
Bathing resources (29 places)	608	171	12

# **ENVIRONMENTAL ENFORCEMENT**

## **1. LEGAL BASIS**

The Environmental Protection Act 1993, Article 96, makes provision for all aspects of environmental protection inspection and enforcement to be the responsibility of the State Environmental Inspectorate, at both national and local level. However, the extent of environmental enforcement and compliance in Slovenia is weak due to ineffective enabling legislation and regulations, subsequently inhibiting effective enforcement, and the activities of the Inspectorate.

## **2. INSTITUTIONAL ISSUES**

In order to be effective and transparent in the discharge of its duties in an impartial and objective manner, the Inspectorate of the republic of Slovenia for Environment and Physical Planning, as an enforcement agency, must be able to address situations that have a negative impact on the environment.

Environmental standards and requirements in Slovenia are mostly comparable to those in Western Europe, but weak enforcement makes them ineffective. Environmental standards by themselves are not a guarantee for reduction of environmental pollution, but rather having in place financial and technical resources to achieve environmental compliance, available to the polluters, as well as the regulatory institutions having the resources and powers to enforce compliance.

This requires the existence of procedures and their effective implementation for environmental enforcement purposes.

The institutional arrangements with regard to environmental enforcement involve both the Environmental Inspectorate and Municipal Authorities.

This places very onerous responsibilities on the Inspectorate in comparison with the requirements of unrealistic legislation.

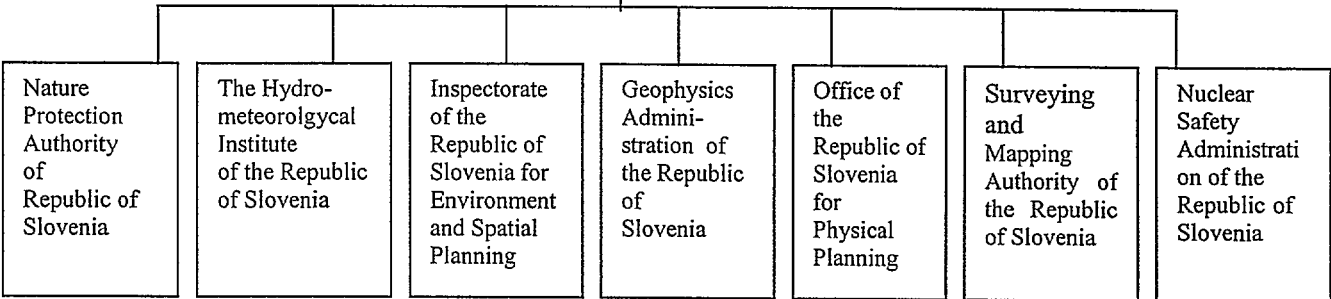
The Local authority has got possibility of establishing local environmental inspectorate since June 1997. In the near future it is expected that State inspectorate could transfer some competence to the Local inspectorates on the field of public services for environmental protection. Under the institutional arrangements, it is also proposed to establish local regulations to air, water etc.

The extent of co-ordination between the two enforcement bodies has yet to be ratified so as to avoid duplication of enforcement effort. It is not yet envisaged if the Local Inspectors should report to the Environmental Inspectorate on a regular basis.

## **3. OPERATIONAL OVERVIEW**

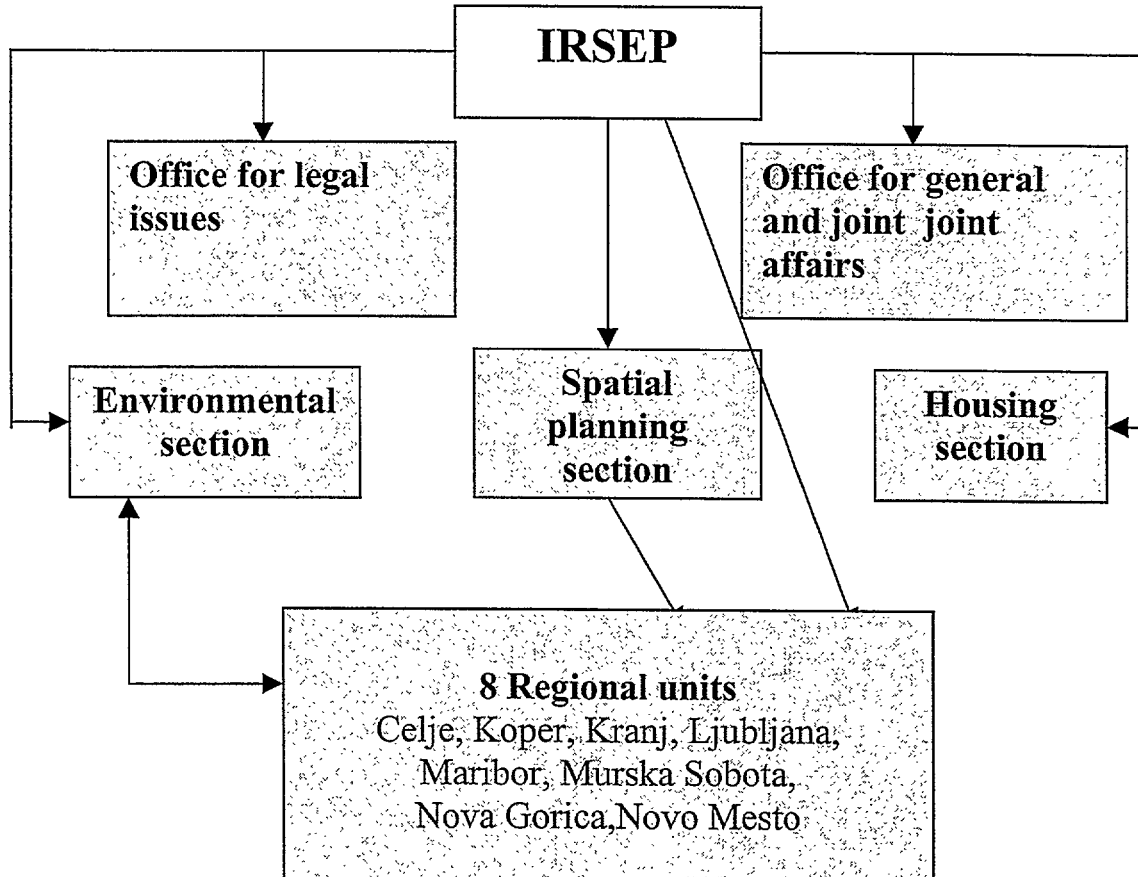
The Government has 16 Ministries, one of them is Ministry of Environment and Physical Planning (MEPP). It consists of seven Institutions, one of them is also Inspectorate of Republic of Slovenia of Environmental and Physical Planning (IRSEP).

**MINISTRY OF THE ENVIRONMENT AND PHYSICAL PLANNING**



**3.1. Environmental Inspectorate**

All enforcement aspects of environmental protection are under the control of Inspectorate of RS for Environment and Spatial Planning comprising eight Regional units. The current enforcement capability of the Inspectorate is restricted to 70 % (47 active inspectors) of its potential operational capacity (67 inspectors). Prior to 1995 the Inspectorat carried out its duties at municipal and state level. The present Inspectorate revolved out of the former Water Management Inspectorate, which was associated with urban planning inspection.



The Inspectorate has responsibility for enforcement with regard to:

- Air emissions,
- Water discharges,
- Waste material & land fields,
- Noise emissions,
- Border control,
- Control of public services for environmental protection,
- Nature protection,
- Co-operation with other institutions at environmental pollution caused by accidents.

The Environmental Inspectorate currently exercises its enforcement prerogative by way of:

- *Applications to the (Offence) Judge for fines for non compliance.*
- *Ensuring that major industries prepare Environmental Action Programmes (EIA's) in accordance with the requirements of the EP Act 1993 when necessary.*

In accordance with the requirements of Article 36 of the EP Act 1993, the statutory duties of the State Inspectorate are as follows:

- Supervision of environmental protection with regard to rehabilitation and other measures necessary for the minimisation of environmental impact due to an activity, and within time limits as set by the Inspectorate.
- Advise the Minister on the requirements necessary for minimisation of environmental impact of an activity.
- In the event of an activity not complying with the requirements stipulated by the State Inspector the following actions are implemented:

⇒ *cessation of the activity or equipment thereof.*

⇒ *cessation of use of substances, technological processes.*

The preparation of an EIA (Environmental Impact Assessment) by major industries (only when they do not comply) with regard to new developments is submitted to the MEPP as part of the planning and regulatory process. The purpose of the EIA is to assess the likely impact of any major development on the environment. The EIA proposal is submitted to the MEPP by the Inspectorate with details of the pollution problems of the particular industry. The MEPP evaluates the proposal and decides on the level of environmental information to be detailed by the industry in the EIA.

Upon completion of the EIA the Inspectorate monitors the extent of EIA implementation by industry.

The role of the Inspectorate is to ensure that emissions to air, water etc. are in compliance with national emission standards for these environmental media. The current role of the Inspectorate of environmental protection may be summarised as follows:

- Inspect all emission sources
- Monitor emissions to the environment
- Technical Inspection of new buildings and facilities
- Emergency response

- Liaise with Slovenian Military on environmental issues
- Issue agreements with permits for infrastructure developments.

The problematic issues concerning the operational effectiveness of the Environmental Inspectorate are as follows:

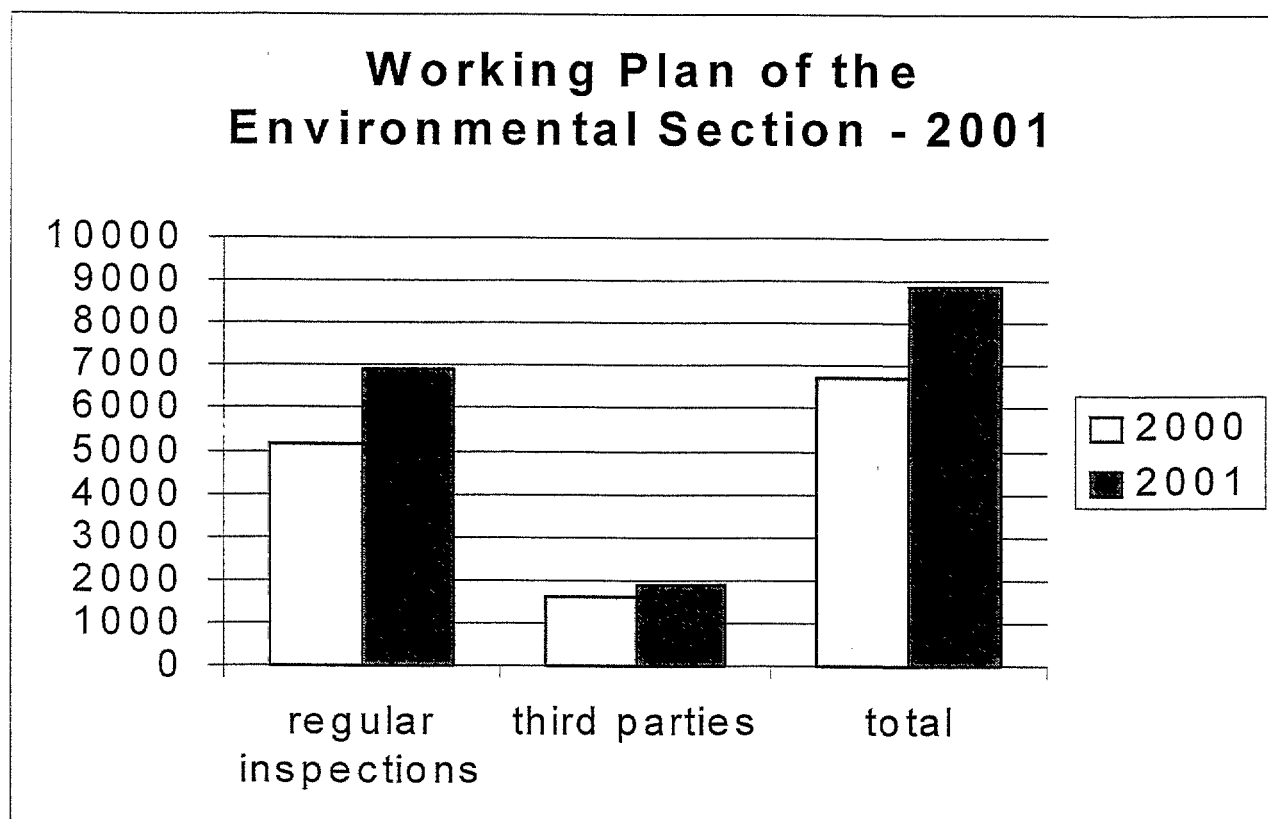
- Extent of legal responsibilities of the Inspectorate as regards enforcement are not clear. Provisions 333-337 of the Republic of Slovenia Criminal Law can only be applied for major environmental protection violations.
- Lack of an effective Management Information System.
- Practical field training and skills base of the Environmental Inspectorate for sectors such as – air emissions, water pollution, solid waste etc. Is very limited.
- Environmental Inspectorate has only limited resources to issue BAT guidelines for a limited number of industry sectors. This is due to lack off staff with specialist knowledge of key industrial sectors.
- Presently a total of 47 active inspectors are based in Ljubljana and other eight regional units, while at least another 20 are required as a critical mass to exercise their statutory functions for the whole Slovenia.
- There is a lack of understanding in terms of scope of responsibilities between the Environmental Inspectorate and the proposed Local Community Environmental Inspectorate.
- The water management function of the Inspectorate covers not only all aspects of water management, but also nature protection.
- The Environmental Inspectorate has difficulty in regulating domestic and hazardous waste landfills, and consequently there is widespread unregulated discharge of leachate to watercourses and groundwater.
- Unauthorised activities such as small hydroelectric power plants were built without documentation or authorisation from either the environmental enforcement or planning units within the Inspectorate for Environment and Physical Planning.
- Ownership transformation has caused many problems during inspection work, together with the establishment of new enterprises without regard for environmental protection.
- District Inspectors are overloaded because they are being made responsible for too many inspection activities.
- Monitoring reports for all environmental sectors, and chained custody forms regarding waste transport including waste oils are under the control of the NPA, and not the Inspectorate.
- The Environmental Inspectorate lacks essential technical infrastructure such as adequate computer (data management) and laboratory facilities.

### 3.1.1. Working plan

According to the National working plan of the Environmental section following activities are planned in the year 2001.

Sector	RS	KP	CE	NG	KR	LJ	MS	NM	MB
Air Quality	100	10	10	5	5	30	10	10	20
Waste Management	2240	160	340	100	260	700	150	110	420
Water Protection	2070	150	270	200	170	630	140	140	370
Nature Protection	130	10	20	20	15	30	5	10	20
Industrial Pollution Control And Risk Management	1595	110	150	180	155	500	110	100	290
Noise	805	40	80	85	70	275	35	70	150
Third parties	1910	160	200	120	200	650	150	100	330
<b>Total</b>	<b>8850</b>	<b>640</b>	<b>1070</b>	<b>710</b>	<b>875</b>	<b>2815</b>	<b>600</b>	<b>540</b>	<b>1600</b>

Number of active inspectors	47	3,5	6	4	4,5	14,5	3	3	8,5
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### **3.2. Enforcement system**

Presently at least four permits issued by the MEPP are required for new projects. These are: location permit; building permit, operation permit and water permit. Under the new Building Law there is a possibility for issuing a single building permit (rest is the same). The NPA specifies the environmental aspects of the operation permit (only for the projects of a national importance otherwise the permits are issued by the local authorities). The building process and the operation of the facility are controlled by the Environmental Inspectorate.

State, and Local Authorities must ensure that appropriate measures legal and otherwise are available to achieve environmental protection within their functional areas.

The current environmental legislative climate is beset with implementation problems, and hence translate into difficulties for environmental enforcement. About 50% of industry facilities have operational permits, while only 20% have Water Permits.

In the light of the new Water Law currently in draft format issued, the situation with regard to water permits will change. Presently, the water permit is only issued after the operational permit has been issued.

In terms of enforcement, air, water, noise and land & soil sectors are adequately covered by existing legal instruments (Ordinances). For the waste sector, legal instruments are lacking with only the BASEL Convention requirements, and ordinances (only for monitoring) for hazardous solid waste being followed. Likewise legal instruments are lacking for nature protection and storage of hazardous chemicals, with only ordinances for monitoring purposes in force.

Genetically modified organisms GMO's are not under the jurisdiction of the Environmental Inspectorate but rather the Agricultural Inspectorate.

The enforcement procedures for the environmental sectors are similar with some minor exceptions due to specific problems. In principle the Administrative Law is taken as the legal basis for all the procedures.

The Environmental Inspectorate has an emergency plan which is co-ordinated with the other ministries and can be applied in cases of accidents and major environmental episodes, e.g. oil or chemical spillage. The emergency plan is split into two levels: preventive and reactive.

On the preventive level the Inspectorate adopts a yearly plan which covers major pollutants arising out of regular inspection of industrial sites.

On the reactive level enforcement covers all unexpected environmental emergency scenarios, accidents, and episode reports to the Inspectorate by third parties.

Normally, the reports and/or accidents have priority, but the yearly plan has to be completed in any cases.

### **3.3. Permitting procedures**

Articles 57 to 63 of the EP Act 1993 sets out explicit requirements relating to the licensing of any activity likely to have an impact on the ambient environment. Such impacts may be interpreted as discharges to waters, sewers, air, disposal to land and noise control.

The iterative steps in the permitting process are outlined as follows:



1. *Permit application submitted to the Ministry together with description of the environmental characteristics of the activity in accordance with Article 57 of the Act.*
2. *Competent body of the Ministry prepares draft decision together with public announcement regarding the proposed activity.*
3. *Ministry must make decision either to grant or refuse permit within 30 days from date of draft decision of competent body. If the Ministry refuses to grant an environmental permit it must state reasons thereof or require that the project be modified or amended.*
4. *Where the nature of the activity is unlikely to have implications for health of humans, flora /fauna, safety at work etc., the relevant Ministries thereof must submit their opinions to the Minister within days of being requested to do so, before a permit is issued.*
5. *The Ministry decision together with inputs from concerned parties, summary of the environmental impact report, method of contribution of opinions and public comments, and shall be announced in the public media. This is done within 8 days of granting the permit. The duration of the public presentation shall not be less than 15 days. All costs for the public presentation are borne by the developer.*

Permit / License conditions are explicit in terms of conditions set out, and must also make provision for the elimination of any adverse environmental impacts.

The NPA is directly responsible for the issuing of permits to discharge to air, water etc. while the Environmental Inspectorate is responsible for ensuring that the conditions are relevant to the particular licensed activity. It is also the duty of the Inspectorate to monitor the permits for compliance purposes.

### **3.4. Enforcement procedures**

Prior to the EP Act 1993, provision for environmental issues was addressed within the scope of the planning and operation permits. As was often the case plants previously commenced operations without an operational permit, and as consequence the Environmental Inspectorate were therefore unable to exercise their enforcement jurisdiction. This is a major problem issue with older plants, who continuously look on the need to care for the environment as a negative outlook.

However, for newer plants the situation is more coherent as planning permits and environmental permits are stricter, thereby enabling the Inspectorate to exercise their enforcement authority. The problem is mainly with older plants which do not have the requisite permits either to operate or to discharge emissions to the environment.

Despite the provisions of the EP Act 1993 regarding environmental protection, existing penalties and laws for environmental protection violations are deficient. Moreover, Provisions 223, 224 and 333-337 of the Criminal Law relate only to major violations. The legal procedure for dealing with minor violations is complicated. Most of the infringements relate to air and water emissions.

Article 41 of the EP Act 1993, stipulates that licensed facilities have an environmental protection office designated, with responsibility for monitoring and recording environmental emissions from the facility.

For the Environmental Inspectorate, the typical routine involved in inspection of facilities for environmental compliance purposes is as follows:

1. *Site visit (planned / regular or followed from report of third party)*

2. *Review of report arising from previous site inspection and if corrective action has been taken in the event of previous non compliance with emission standards.*
3. *Should the facility continue to be non compliant or if any corrective action has not been undertaken the Inspectorate issues a written order stating what the facility must do to revert to a compliance status.*
4. *Should the written order of the Inspectorate continued to be ignored, a further order is issued which explicitly sets out what the facility must do immediately to attain compliance.*
5. *At this stage the facility may seek through legal channels prolongation of the time frame to attain compliance, and at the same time informing the Inspectorate of what action the facility is pursuing.*
6. *The Inspectorate may respond to this request positively or negatively.*
7. *If the facility does not in any event undertake actions necessary to attain compliance, the Inspectorate can request that the NPA issue legal orders under the Environmental Remediation Action Plan requiring the facility to undertake the necessary remedial actions.*
8. *Should the NPA pursue the above course of action, the Inspectorate can / must follow up the execution of the Action Plan.*
9. *Depending on degree of non-compliance the Inspectorate can indict the facility and responsible person before the Offence Judge. If it is a major violation then the facility are indicted in accordance with the provisions of the Criminal Law (333-337).*
10. *Should the pollution offence be such requiring recourse through Criminal Law, the court will need evidence of a technical nature from the Inspectorate (measurements etc. followed by expert reports).*
11. *The Inspectorate can also issue a written order with the permission of the Court order stating a fine of SIT 100.000. Fines are collected by the taxation administration of the Ministry of Finance.*

The perceived gaps between enforcement procedures as practised in Slovenia and the EU are as follows:

1. *The status of environmental legal instruments are insufficient to ensure sound environmental enforcement.*
2. *The Environmental Inspectorate does not have the power or execution orders as similar Inspectorates in EU countries.*
3. *The Environmental Inspectorate operates mainly on a administrative level, lacking laboratory facilities, technical expertise, or on-line access to the relevant monitoring data of the HMZ.*
4. *The Inspectorate does not participate in the preparation of legal instruments regarding non-compliance.*

#### 4. EMISSION CONTROL

The prescribed release or discharge of emissions to air, water etc. is under the control of the Environmental Inspectorate, who are required to ensure that all environmental emissions comply with environmental quality standards and emission limit values.

Compliance schedules for environmental emissions are established by the MEPP, but without any consultation or input from industry. This has implications for the effective enforcement of environmental standards.

The difficulties experienced by the Inspectorate in relation to control of emissions and enforcement of compliance standards are highlighted below for the environmental sectors air, water and waste etc., and to which enforcement of standards applies:

##### 4.1. ATMOSPHERIC EMISSIONS

The problem issues regarding the control of atmospheric emissions and enforcement of compliance standards are outlined as follows:

1. *No consistent monitoring of industry emissions undertaken by the Inspectorate. Only spot checks on emissions data generated on behalf of industry by consultants/appointed laboratories.*
2. *The Inspectorate may order spot checks on emissions if there is evidence of non-compliance, which then have to be undertaken by the industry concerned. This is not done consistently due to lack of Inspectorate technical resources.*
3. *There is a lack of economic incentives / economic instruments for emissions reduction which would otherwise support the Inspectorates approach to emissions control. The MEPP prepares schedules for reduction of major atmospheric pollutants. The Inspectorate is required to ensure that emission reduction targets within the time schedule are being achieved. Fines are imposed for achieving agreed reductions in emissions, but the process of administering the fines is highly bureaucratic.*
4. *Unrealistic emission standards are difficult for major polluters to achieve and for the Inspectorate to ensure that compliance with such standards is being achieved.*
5. *Portable hand held air emissions monitoring equipment such as DRAEGAR EQUIPMENT is not available to Inspectors conducting random checks on atmospheric discharges from industry.*
6. *Only significant episodic emissions to air are reported, with no consistent reporting on emissions undertaken routinely.*
7. *Training for Inspectors at national and local level is required regarding air emissions enforcement, in order to meet with EU requirements on atmospheric emissions enforcement.*
8. *Yearly reports to the NPA are envisaged in the monitoring ordinance.*

## 4.2. EFFLUENT DISCHARGE

The problem issues regarding the control of effluent /wastewater emissions and enforcement of standards are outlined as follows:

1. *Industry has a duty to perform self- monitoring of effluent discharge, submit a regular yearly to the NPA. The only problem is that there are no consequences for not complying with the reporting requirement.*
2. *Emission standards set can be unrealistic and unattainable, with pollution control systems and equipment currently available.*
3. *There is very little by way of enforcement regarding point source discharges other than those from industry or wastewater treatment plants.*
4. *There is very little evidence of the using situ automatic sampling equipment for monitoring illegal discharges or to check on discharges for compliance purposes.*

## 4.3. WASTE

The problem issues regarding the enforcement of waste management practices and standards are outlined as follows:

1. *The Environmental Inspectorate has responsibility for enforcement of standards relating to hazardous & non-hazardous wastes.*
2. *Little information is available as to the extent of the enforcement brief of the Inspectorate regarding landfills and landfill management.*
3. *Hazardous waste is under the control of the Inspectorate, but the data base for hazardous waste is maintained in the MEPP. The Inspectorate does not have direct access to this data base.*

## 4.4. NOISE EMISSIONS

The problem issues regarding the enforcement of noise regulations are outlined as follows:

1. *No indication from the Environmental Inspectorate as to the extent of enforcement of noise regulations.*
2. *The Inspectorate is not equipped to do spot checks on intrusive noise sources without first having to make a public announcement to do so.*
3. *No national network for noise monitoring.*
4. *Yearly reports to the NPA are envisaged in the monitoring ordinance but is not yet practised.*

## 4.5. RADIATION

As nuclear hazards are not regarded as part of the environmental field, they are being regulated and enforced elsewhere, namely within the Nuclear safety Administration (NSA), but still as an agency of the MEPP. The Inspectorate with responsibility for nuclear hazards and radiation within nuclear facilities is part of the NSA.

The basic legal framework is old (Yugoslavian Nuclear safety Law 1984) with updated ordinances similar to those in the US. The Nuclear Inspectorate has recently issued an internal directive which sets out the requirements for daily radiation monitoring at nuclear facilities, thus ensuring compliance with EU and International requirements.

Administrative Law is taken as a legal basis for all the procedures relating to the activities of the Nuclear Inspectorate.

## 4.6. INDUSTRIAL POLLUTION CONTROL AND RISK MANAGEMENT

Industrial Pollution Control and Risk Management are areas which come under the control of the Slovenia Environmental Inspectorate. EU Directives and Regulations pertaining to these areas are: control of industrial emissions, control of major accident hazards and environmental audits and eco-labelling.

### 4.6.1. CONTROL OF INDUSTRIAL EMISSIONS

This area includes directives which establish requirements for permits for the operation of certain industrial facilities so as to control releases to air, water and generation of wastes. The directives include the Integrated pollution Prevention & Control Directive 96/61 EEC (IPPC). Emissions from Large Combustion Plants Directive 88/609 EEC covers emissions of SO<sub>2</sub>, NO<sub>x</sub> and particulates and establishes targets for reduction of total emissions for each member State, and the Air Pollution from Industrial Plants Directive 84/360 – a framework directive to be replaced by the much broader IPPC Directive in 2007.

### 4.6.2. CONTROL OF MAJOR ACCIDENT HAZARDS

This covers the Seveso Directive 96/82EC and has been a model for similar directives outside Europe. It requires industrial plant operators to identify major accident hazards, implement control procedures and to limit their effects. It will supersede the 82/501 EEC directive in 1999.

### 4.6.3. EMAS & ENVIRONMENTAL AUDITING

This covers regulations pertaining to eco-management and audit scheme EMAS 1836/93/eec AND ON ECO-LABEL 880/92/eec. The EMAS Regulation, which is similar to ISO 14000 environmental management system, encourages the voluntary participation of industrial plants in the development of internal environmental management system and audit programmes as a means of enhancing environmental performance.

#### 4.6.4. INTEGRATED POLLUTION PREVENTION CONTROL

EU Directive 96/61 – concerning Integrated Pollution Prevention and Control (IPPC), is the cornerstone directive for the purposes of approximation of Slovenia environmental licensing and enforcement procedures with those of the European Union.

Existing environmental permitting procedures in force in Slovenia, should as and where appropriate be modified so as to align with EU-IPPC requirements.

Approximation of enforcement will only be successful provided that environmental regulations are enforceable. The environmental Inspectorate must have sufficient legal authority to develop and to enforce regulations and permits. The Inspectorate should have responsibility for integrated environmental permits for the large tranches of industry, while municipal or local authorities would have responsibility for the smaller and less polluting industry and other activities.

Effective enforcement procedures and practices must ensure that the goals of environmental protection are actually achieved. To do so, enforcement procedures must in accordance with EU-IPPC requirements, be strong, efficient, creative and fair.

For these reasons the proposal for establishing of Slovenian Network on the Implementation and Enforcement of Environmental Law was carried out at the end of year 2000.

The main goals of the network:

- to fulfil the obligations imposed by EC environmental legislation (Chapter 22 except nuclear safety) in the fields of implementation and enforcement
- to be a channel for the dissemination of information of the work of IMPEL and AC IMPEL, INECE within Slovenia and vice versa,
- to get feedback for reporting duties concerning enforcement for IRSOP (Inspectorate)
- to provide a better communication between internal institutions and ministries
- to provide a better flow of information between the different institutions and ministries
- to support day by day work
- to provide a better information of the public
- to provide a better information for the decision makers
- to provide a better co-operation concerning EU – programmes concerning the environment
- to ensure co-operation with other networks (EIONET, Aarhus Convention Network)
- to ensure an exchange of information inside the Inspectorate
- to clear out the competencies of the different institutions or bodies involved
- to find out possibilities for the improvement of internal organisation processes
- to provide an expert pool for IMPEL, AC IMPEL (Council) etc.

## 5. ENFORCEMENT

### 5.1 INSTITUTIONAL REFORM

In EU countries the successful enforcement of licence/ permit conditions require impute from ongoing environmental monitoring by the regulator and environmental reports prepared by regulated entities.

Institutional reform (as it pertains to compliance monitoring & enforcement) is an essential prerequisite for the purposes of approximation targets and strategies.

Enforcement can be controversial because so much is at stake environmentally and economically. To be successful, enforcement requires support at all government levels and within all sections of the enforcement programme. It is a top down process requiring commitment and support.

The process of establishing standards and introducing regulations is based on two criteria as follows:

- Capacity to implement effectively
- Commitment to achieve the intent of the law

To meet these criteria, Slovenia may require new and strengthened institutional structures to manage planning legislation, standard setting, licensing /permitting, monitoring and enforcement.

One of the numerous obligations of the EU Approximation process is that of adopting the Slovene legal system in line with EU requirements. Inevitably, regulatory change induces institutional adjustments which involves putting in place environmental standards, legislation and enforcement system similar to those in existence in EU member States.

While there is clearly no need to create entirely new institutions, there is a need to institute clear policies implement and enforce regulations, and to strengthen the powers and resource base of existing institutions.

The course of institutional change as it relates to compliance monitoring and enforcement may be outlined as follows:

1. *Establish clear lines of institutional responsibilities.*
2. *Decision making processes should be visible and transparent, especially of Slovenian regulatory institutions at the regional level come under local municipality control.*
3. *Slovenian regulatory institutions should seek a co-operative and consultative role rather than a confrontational relationship with industry, balancing the requirement to reduce emissions with economic considerations. Technical and negotiating skills are important.*
4. *High calibre staff and facilities are essential.*
5. *Each enforcement system needs to identify the appropriate mix of self – monitoring and independent control.*
6. *Self – monitoring places the onus of costs on the polluter, although a convincing independent random checking system is essential.*

7. *Monitoring and enforcement institutions must develop strategies to recover costs. Grandiose elaborate institutional monitoring system and institutions, which are not used effectively for enforcement purposes, are a drain on fiscal resources.*

To overcome constraints relating to enforcement, Slovenian institutional policies should seek to build on existing structures in particular on the technical / enforcement side, substantiate their powers, widen their scope and strengthen managerial and technical capabilities.

## 5.2 ENFORCEMENT MECHANISMS

Environmental laws will be most effective, if they provide the Environmental Inspectorate with the necessary enforcement powers. Without sufficient authority an enforcement programme will be hindered in its ability to establish compliance. The credibility of enforcement and indeed that of the Inspectorate will be affected if violators can successfully challenge the authority of the Inspectorate.

Laws generally establish the institutional framework for their own enforcement by describing who will be responsible for implementing them. Without such a framework, it may be difficult to establish who is responsible for ensuring compliance has been achieved.

The major enforcement transgressions which Environmental Inspectorate there are most likely to come across are:

- Falsification of documents
- Operating without a permit / licence
- Interference with monitoring, control equipment, flow meters etc.
- Repeated violations
- Intentional and deliberate violation of emission standards.

For approximation purposes the emphasis should be on procedures for licensing, permitting, and on compliance monitoring & enforcement mechanisms similar to what is conducted in EU Member States. Environmental standards and guidelines *per se* are not a guarantee of environmental improvement. Regulatory institutions must have the resources and powers to enforce compliance, and this requires the existence of procedures and their effective implementation.

Four stages may be considered in the **application and enforcement of emission standards or environmental quality objectives** once these have been established.

1. *The issue of a licence / permit to discharge which incorporates the emission limits to be applied self-monitoring and reporting requirements.*
2. *Monitoring usually by examination of control data submitted by regulated entities with random checks by the Environmental Inspectorate.*
3. *Mechanism for dealing with licence / permit infringements leading to sanctions with an appeals procedure.*
4. *Enforcement of sanctions.*

Licensing, permitting and dealing with non compliance requires staff with a knowledge of environmental legal issues, technical understanding of industrial processes and abatement technology (BAT / BATNEEC), in order to be able to judge the real significance of a non compliance of environmental standard(s), and negotiating skills.



Regulatory Institutions in Slovenia have mostly adequate legal basis for imposing obligations and sanctions on target enterprises to install the necessary pollution control technology or take any other drastic actions including closure to reduce the impact on the environment.

Despite recourse to these measures, difficulties continue with the implementation of enforcement measures. Moreover, the application of sanctions to plants which do not have the financial resources to comply with standards raises economic questions which the Environmental Inspectorate is ill-equipped to resolve.

For enforcement to be effective the environmental Inspectorate must be able to draw upon a mix of skills and expertise. Defining the roles of the individuals involved in enforcement provides a basis for efficiency and co-operation. Critical suggestions to the success of an effective enforcement programme, and similar to what is undertaken in enforcement programmes in EU countries, are discussed under the following headings.

### **5.2.1 PERSONNEL**

#### Role of Environmental Inspectorate Personnel

Effective enforcement requires input from engineering, scientific, legal and administrative resources. These individuals will need to work together effectively to identify and respond to infringements and non compliance. Clearly defining the roles of the individuals involved in the enforcement process provides a basis for efficiency and co-operation.

#### Staffing Level

Ideally the Environmental Inspectorate should have sufficient staff at state and local level to adequately maintain its enforcement programme objectives. In reality programme objectives may be based in part on staffing level that may be achieved with available Inspectorate enforcement resources. Therefore staffing and enforcement programme strategies should be interrelated. The enforcement programme strategy will define the frequency of facility inspections, and staff time required to conduct them, based on duration of inspections, written reports and any follow up actions. Invariably the time required before and after a facility inspection may be twice as long as the inspection itself. The Inspectorate will need to ensure a balance of staffing among the various enforcement functions to reduce avoid bottlenecks due to inadequate staffing levels.

It is also important to focus only on major violations, rather than every facility violation for non compliance, as otherwise the enforcement programme could lose credibility and operate inefficiently.

#### Training

Developing the scope of expertise required to run an enforcement programme is challenging, and there are no hard and fast rules to obtaining the right skills mix.

Enforcement is such a highly specialised area that some training must occur on the job, either formally, through training programmes, or informally e.g. by placing a trainee inspector alongside a more experienced inspector performing the same function.

Integrated training (i.e. training designed to develop basic skills in a variety of expertise areas) is valuable to develop the interdisciplinary skills essential to enforcement.

Environmental inspectors are often the only environmental officials that a facility manager will have contact with, and may serve as the key person in an enforcement hearing. Inspectors will

need to be competent not only in a broad range of technical skills, but also will need to be technically competent in the type of facility inspections they perform, skilled in obtaining crucial fact, collecting and obtaining evidence of non compliance. The training and integrity therefore of Inspectors are critical to effective enforcement programmes.

## **6. COMPLIANCE MONITORING & INSPECTIONS**

Compliance monitoring and facility inspections are the key elements of a successful enforcement programme. Experience with environmental programmes in Western Europe and other countries has demonstrated that enforcement is essential to compliance. This is because entities will not comply with the law unless there are clear consequences for non-compliance with environmental standards.

### **6.1 COMPLIANCE MONITORING**

Compliance monitoring can be conducted by the Environmental Inspectorate (the regulator) using the resources of the HMI, alternatively the regulator can rely mainly on examining data submitted by the source generating the emissions.

It is essential that source emitters are legally obliged to report compliance monitoring data, preferable to a certified analytical standard, at regular intervals.

Such a system requires a good quality assurance and laboratory accreditation scheme in place to ensure a satisfactory quality of analyses of self-monitoring samples. Instructions have to be established for compliance monitoring frequency, type of analysis to be used, sampling method, point of sampling and in what form and at what frequency the results have to be reported.

The Inspectorate must have the ability (resources & equipment) to carry out spot checks on the accuracy and representativeness of the data submitted. Provision should also be made for making the falsifying of self-monitoring results or the withholding of failures a criminal offence.

Receiving water and air quality monitoring is the task of the NPA / HMI and local authorities, although in general some of these activities are contracted out to consultants / Universities and Institutes. Foreign financial assistance e.g. World Bank has improved the technical infrastructure of ambient environmental monitoring.

### **6.2 INSPECTIONS**

Inspections are the principal means monitoring compliance with environmental legislation. Facilities should provide Inspectorate officials with emissions data in accordance with self-monitoring and reporting requirements, which should be stipulated in permits issued. However, due to staff, financial and technical limitations in terms of the number of facility inspections, which Inspectorate officials are able to conduct in a year, and the large number of facilities, the Inspectorate should be greater reliance on the use of self-monitoring and reporting requirements. In addition the reallocation of environmental duties needs to be examined, as well as transfer of some enforcement costs to industry.

Although the Inspectorate and local inspectorate officials have the authority to conduct site inspections the extent of their jurisdiction is not clear due to lack of regulations giving effect to their authority. The fact that both inspectorates conduct inspections means that the potential exists for a comprehensive enforcement programme. Apart from inspections being undertaken as a response to complaints, inspectors must as a matter of routine, conduct inspection of major

facilities at least once each year, and others every two years, and also conduct repeat inspections. An inspection should consist of: Inspection Plans; Inspection Procedures; Sampling & Analysis; Inspection Reports.

Facility or site inspections should ideally comprise three levels as follows:

#### LEVEL 1 WALK THROUGH INSPECTION

Quick survey of the facility by Inspectors, checking for presence of control equipment, observing work practices and environmental housekeeping, records verification. Such inspections establish an enforcement presence, and also as a screening process to identify facilities that should be targeted for more intensive inspection.

#### LEVEL 2 COMPLIANCE EVALUATION INSPECTION

Thorough facility inspection but does not include sampling. It can include activities as undertaken in Level 1, and *inter alia*, review and evaluation of records, interviews with staff, review of self-monitoring methods, instruments & data, examination of process and control devices, and extent of compliance with emission standards etc.

#### LEVEL 3 SAMPLING INSPECTION

This includes visual and record reviews of the other inspection levels, in addition to preplanned collection and analysis of samples. These inspections are very resource intensive.

An inspection plan developed before going on site helps ensure the quality and value of the inspection. It provides an organised sequential approach to conducting the inspection. However, some flexibility is also important to allow the inspector to adapt to unanticipated situations at the facility.

Virtually any enforcement programme, no matter how adequately funded, will never have enough resources inspect all regulated facilities. Therefore, the key issue to be considered in creating an inspection programme is how to target the scarce Environmental Inspectorate resources to achieve maximum effect.

### 6.3 SELF-MONITORING

For monitoring purposes the introduction of a Self – Monitoring Programme by industry will enable the NPA / HMI to:

- Establish an inventory of available information on different industrial production processes and available information from activities in relation to effluent monitoring from industry (number of samples, variables analysed, flow measurements, procedures for quality management, data management, facilities, equipment and personnel).
- Establish an inventory of available information on industrial production processes and emission factors.
- Identify industries representing “hotspot industries” and known to be major polluters of air, and surface waters. Principal among these are the power plants, chemical industries, pulp and paper.

Slovenian industries which have self-monitoring systems in place, will be those industries who have or in the process of establishing environmental management system (EMAS / ISO 14000) for their particular sectors.

The introduction of the IPPC process in due course to Slovenia will place an onus on major industry sectors will be subject to the IPPC process, to have effective self-monitoring and environmental reporting systems in place.

Self - monitoring reports may be used by facilities for routine reporting to the NPA and Environmental Inspectorate, and also for internal reporting purposes.

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**SPAIN**

## INSPECTORATE SYSTEMS IN SPAIN

### Introduction

Spain is a decentralised country in which environmental competences are shared between the Central State Administration, the Regional (Autonomous Communities) and the Local Administration. While the Spanish Constitution gives the Central Government competencies in the elaboration of the basic legislation, the Autonomous Communities can make their own legislation establishing higher levels of protection and are the main administrative body regarding the implementation of the environmental legislation. The law also gives some competencies to the Local Authorities in the field of environmental protection (Law 7/1985 of Local Regime Basis).

Examples of different competencies in this field are the Wastes Act 10/1998, which establishes the Regional Authorities as the appropriate body in permitting, monitoring, inspection and enforcement for activities of production and management of wastes. Industrial and urban effluents to continental waters need permits from Catchment Confederations -Ministry of Environment- (Law 29/1985), while effluents to marine waters are controlled by the Regional Authorities (RD 258/1989). Permits regarding urban development are given by the Local Authorities based on urban plans which are approved by the Regional Authorities.

Basic legislation on the environment in Spain are sectorial laws such as the Water Act of 1985, the Coasts Act of 1988, the Wastes Act of 1998, or the Law 38/1995 which guarantees the access to environmental information. Other exclusive competencies of the Central State are those related with international relations, discharges from ships, management of water resources and public works when more than one region is affected.

The linking of all the policies and measures in this field is carry out by the Ministry of Environment with instruments like the Sectorial Conference of Environment, the Consultation Council of Environment, and the Network of Environmental Authorities.

Several Regional Communities have their own framework law on environment including monitoring and protection -i.e. Law 10/1991 of Environmental Protection in the Community of Madrid, Law 1/1995 of Environmental Protection in Galicia, Law 1/1995 of the Region of Murcia, Law 3/1998 of the Basque Country, or the Law 3/1998 of Catal nia. These provisions replace or complement the 1961 regulation of unpleasant, unhealthy, harmful and dangerous activities.

## **Environmental control**

In the national framework of shared competencies the inspectorate function, including permitting, compliance control and enforcement, depends on the autonomous region in which the activity settles in, and on the sectorial Central State provisions. In this report we'll try to give a general view of the inspectorate system in some of these regions: Madrid, with the 1,6 % of the total area and the 12,7 % of the population of Spain (629 inh/km<sup>2</sup>), and Catalonia, with the 6,3 % of surface and the 15,5 % of population (192 inh/km<sup>2</sup>). The industrial sector, urbanisation and tourism have an important role in both autonomous communities.

The tendency of environmental control in Spain is now oriented to complete the traditional inspectorate activity with a set of techniques and instruments in order to implicate all the actors in the activity. The Wastes Act of 1998 make compulsory that enterprises in charge of disposal and valorisation of wastes have to have their own register of data. In case of dangerous wastes enterprises must forward to the Environmental Authorities an annual report of their activities.

Regional legislation on wastewater disposal (e.g. Law 10/1993, of Madrid) requires industries to have an automatic system of control of emissions. Compulsory environmental liability insurance is included by most of the regional provisions (e.g. Law 10/1997, of Galicia). Besides voluntary adhesion to eco-management and audit schemes is also be implemented (e.g. Law 1/1995, of Murcia).

There is also a tendency to collaborate with private enterprises in environmental control. For instance, the Catalan Law 3/1998 distinguishes between control, which is made by collaborating enterprises, and inspection, which is made by the environmental authorities. Because this collaboration could be problematic in the field of industrial confidentiality, these enterprises must be authorised by the administration and comply with some requisites such as accreditation by the National Entity for Accreditation.

Participation of NGOs and other socio-economic actors in decision making on environmental issues must allow a better effectiveness of the legislation. Several institutional organisations such as the Advisory Counsel of the Environment, National Counsel of Water or National Counsel of the Climate must allow public information and participation.

The right to access to environmental information is regulated by the Law 38/1995 (amended by the Law 55/1999). Every citizen can request to the Administration for information about water, air and soil quality; fauna, flora, ecosystems and activities that could affect them; and plans, programs and other activities for environmental management and protection.

Besides the enforcement on Administrative Laws, in which the Regional Administration is mainly the competent body, the Spanish Criminal Code includes penalties relating to breaching of town planning rules and historical heritage, natural resources and environmental protection.

## Inspectorate system in the Community of Madrid

In the framework of the basic environmental Central State legislation the Autonomous Community of Madrid developed the Law 10/1991 for the environmental protection in this Community. The law regulates the procedures all the activities have to follow in order to reduce or eliminate harmful effects on the environment.

There are two procedures for permitting: Annex I and II summarise the projects, works and activities that need an Environmental Impact Assessment; and annex III and IV set up the procedure for Environmental Qualification, which is the procedure the activities have to follow before the Municipal License, in order to know possible perturbations on the environment.

The Environmental Qualification is made by the Environmental Agency of Madrid in the case of big industries (annex III) and small and medium industries (annex IV) located on municipalities less than 20.000 inhabitants. In municipalities more than 20.000 inhabitants or those in which competencies have been transferred from the Environmental Agency, the Local Government is in charge of the Environmental Qualification.

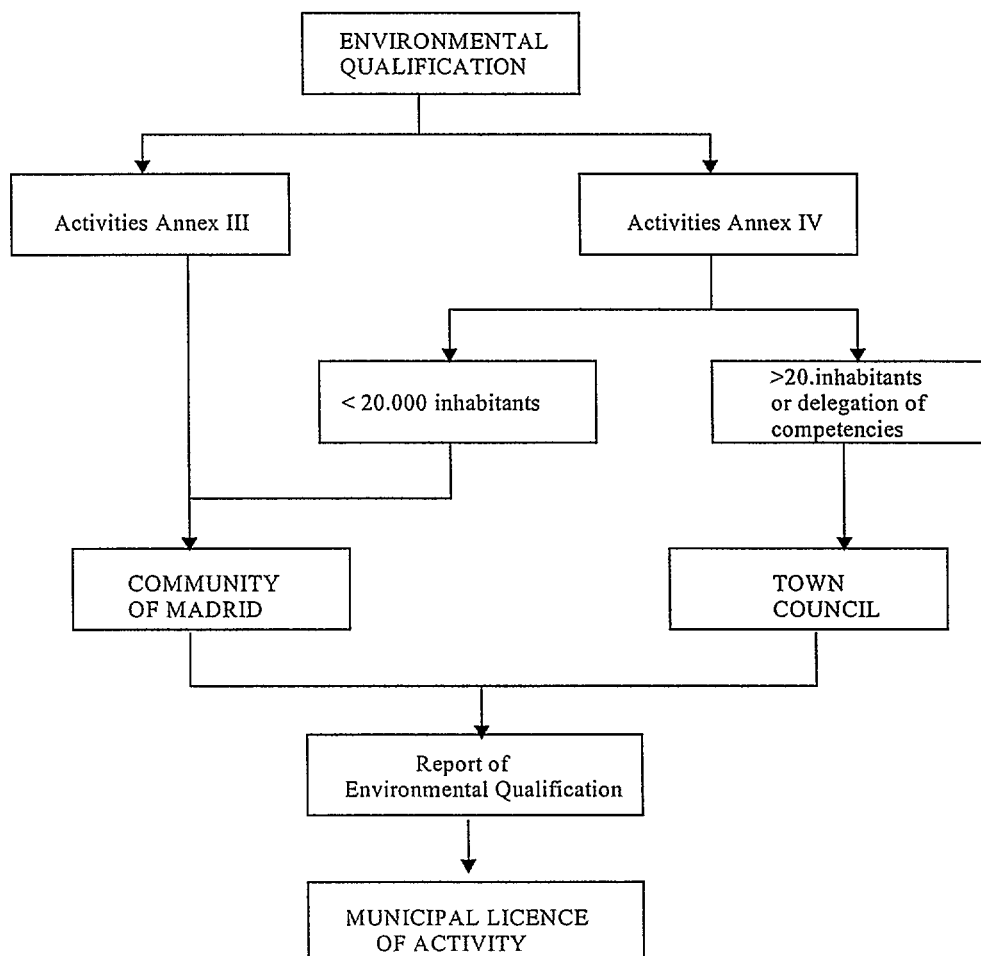


Fig.1 Procedure for Environmental Qualification in the Autonomous Community of Madrid



Municipalities, and other bodies of the Regional Authority in some cases, are in charge of environmental inspection and monitoring. The body responsible of the Authorisation can suspend the activity execution in case of non-compliance and take other preventive measures. The law distinguishes three kinds of violations according to their importance and irreversibility, and establishes different fines for each of them.

### **Integrated environmental intervention in Catalonia**

The Catalan Law 3/1998 sets up the system of administrative intervention for activities that could affect the environment, public security and health, replacing the previous legislation on the impact of unhealthy, harmful and dangerous activities, and taking account of the new concepts of the IPPC European Directive, and the collaboration and co-ordination between different levels of the administration.

Administrative intervention depends on the degree of potential impact on the environment, security and health of the people. The law differentiates three administrative regimes: authorisation and environmental control, licence and environmental control, and communication and environmental control. Information on natural resources and environmental quality, environmental quality objectives and thresholds, sources of pollutants, emission levels and BATs will be public and available to the authorities with competencies on environmental evaluations.

Environment authorisation is needed in case of big industries or activities that are thought to have a high environmental impact (those included in the European Directive 96/61/EC concerning integrated pollution prevention and control). This authorisation will integrate all the sectorial authorisations such as production and management of wastes, wastewater disposal and atmospheric emissions, as well as prevention measures in case of fires and other accidents.

Applications for environmental authorisation are presented to the town council, which has to inform on them and send them to the Regional Office for Unified Environmental Management. This office studies the project, makes public information and hearing of the parties, and an environmental impact assessment in some cases regulated by the EIA legislation. The office has to resolve the authorisation within the deadline of six months.

The minimum content of authorisations must be:

- Limit levels of emissions
- Facilities for control and treatment of emissions
- Preventive measures in case of change of normal conditions
- Guaranty system or liability insurance
- Other protective measures required

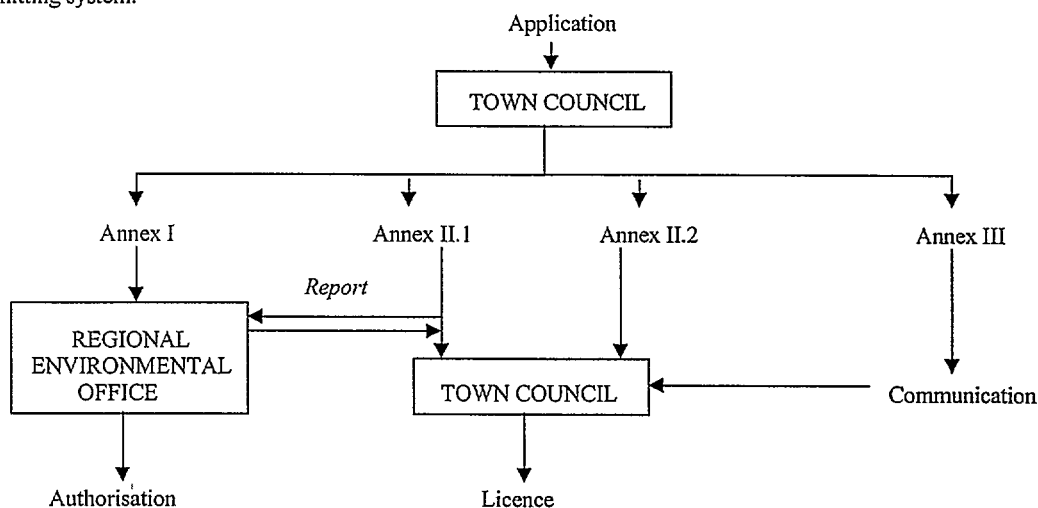
Access to permits conditions is open to the public, with the limitations of the legislation on access to environmental information.

Activities with moderate environmental impact need an environmental licence from the Town Council after report from the environmental body of the region or the municipality, depending on the kind of activity.

Environmental authorisations and licences have to be checked every eight years or before this expiry date in case of an important change in environmental conditions, best available techniques or legislative measures. Companies must report the data of self-monitoring to allow the environmental bodies to check the compliance with the authorisation requisites.

Other activities with low environmental impact need an environmental communication to the Council before their opening. Municipalities can replace this system of communication with the system of license of activity.

Permitting system:



Control, inspection and enforcement:

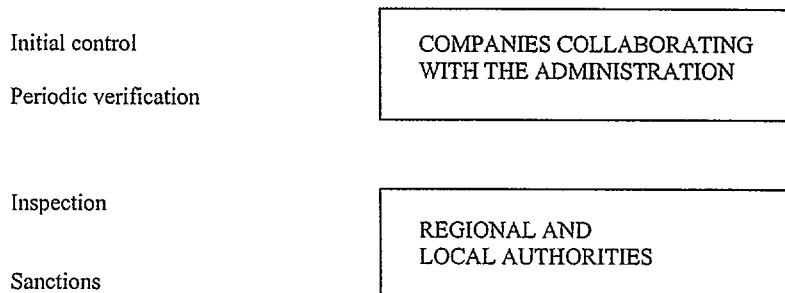


Fig. 2 Environmental intervention in Catalonia

Compliance control is checked in Catalonia by companies collaborating with the Administration. An initial control is made while the opening of the activity and periodic verifications are made every two, four or five years, depending on the kind of activity. Industries participating in the European eco-management and audit scheme will be exempted of periodic verifications.

Both regional and local administrations are allowed to execute inspections whose conclusions must be public. The law also regulates administrative infractions, fines and preventive measures in case of violation.

**SYRIA**

**Syrian Arab Republic  
Ministry of Environment**

**Meeting of  
The Informal Network on Compliance and  
Enforcement of Regulations in The Mediterranean  
for The Control of Pollution Resulting from  
Land-Based Activities**

**Syrian National Report**

**Prepared by: Eng. Reem Abed Rabboh  
Environmental Eng. MSC.  
Ministry of Environment**

**(15-17) / 3 / 2001**

**Sorrento - Italy**

The Syrian coastline is (183) Km in length, with soft sands and a moderate climate, and with a backdrop of the mountain regions.

The coastal basin has three main ports, Lattakia and Tartous and to a lesser extent Banias, each is protected by long breakwaters. In addition there are a number of small fishing ports, also shielded by breakwaters.

The basin's two oil terminals are located in the ports of Banias and Tartous, while Lattakia is host to a small terminal for handling Kerosene and lubricating oils. In addition to that there is an oil refinery and electric power generator plant in Banias as well as cement factory in Tartous.

So, the coastline of the region suffers from a number of polluting and unsightly conditions. These include:

- *Industrial discharges directly into the sea, particularly the oil refinery in Banias.*
- *Substantial quantities of solid waste being washed a shore, together with arbitrary littering especially in the south near Hamidieh shore*
- *High level of domestic & industrial waste water discharged directly into the sea, resulting in chemical, visual and odour problems.*
- *Extensive extraction of marine sand for the construction industry.*

In addition, the coastline experiences an influx of Jelly fish during certain seasons, possibly constraining the potential of future tourist developments.

Consequently, most of the seashore is contaminated by discharging wastewater directly and indirectly to the sea, which may cause infections diseases.

Syria as one of the contracting parties to the Barcelona Convention recognized the danger posed to the marine environment and human health by pollution from land – based sources, particularly, in the field of industrialization and urbanization, which affects on coastal water and river estuaries.

Accordingly, Syria determined to take the necessary measures through concerned sectors to protect its marine environment.

## **Ministry of State for Environmental Affairs (MSEA)**

The Syrian government was among the first Middle Eastern Countries to establish an independent environment ministry and to incorporate environment into development planning. In addition an inter-ministerial body, the Higher Council for Environmental Safety has been established with responsibility for setting national policy and coordinating environmental management activities.

### Tasks:

(MSEA) has a regulatory and research function, its responsible for:

- *Developing environmental policy.*
- *Monitoring implementation of environmental legislation.*
- *Inter-Sectoral coordination.*

### Structure:

(MSEA) is assisted by a consultative technical committee and nine environmental committees, its executive agencies are:

- *The General Council for Environmental Affairs (GCEA).*
- *The Scientific and Environmental Research Center (SERC).*

### Responsibilities:

(GCEA) has direct responsibilities for providing the legislative framework and support requirement for environmental management, including:

Regulations, standards, guidelines for supplying policy and technical advice at the central and local levels.

### Legislation:

The environmental framework law has taken more than (5) years discussion to reach the current stage, whereby major stakeholding ministries have accepted its contents and the primeminister has passed it forward for presidential approval.

### Compliance Control:

Hence, the (MSEA) is the main responsible authority for the seawater pollution control issue, but since the environmental law is not signed yet the enforcement and compliance is not fully applied. The (MSEA) is depending on other sectorial ministries to cover this issue.

## **Ministry of Irrigation (MOI)**

### Responsibilities – Legislations:

The (MOI) is responsible for maintaining and protecting all public water resources in Syria including rivers, lakes, coastal water, springs and ground water, it has broad authority under law (2145) of (1971) and law (16) of (1982) to regulate and control departments in seven river basins.

### Tasks:

The (MOI) has authority to:

- *issue regulations setting water quality standards and discharge limitations.*
- *inspect activities causing water pollution.*
- *make samples and analyses water quality.*
- *advise polluters on ways of reducing water pollution.*
- *enforcing action to obtaining compliance with water pollution protection, however, must be taken by local government or by the appropriate ministry.*

### Structure – Inspection:

The (MOI) has an extensive water monitoring network. It has its own laboratories for monitoring and analysis in each basin .

The pollution Control Directorate (PCD) of the coastal basin which locates in Lattakia has (72) observation points along the Syrian coast for sea water monitoring and rivers which flows into the sea.

The (PCD) has divided the coastline into (12) locations, each one has (6) observation points.

Generally, technicians in (PCD) take samples of sea water near by the shore (using the boat or not) to make the periodical analysis (one time per month) which include:

- *Bacteriological analysis (Fecal Coliform Counts).*
- *Temperature, PH, Dissolved Oxygen, salinity, status of waves, speed of the wind).*



Furthermore, there is a regular monitoring (One time per month) for rivers which flowing into seawater, it include:

- *Fecal coliform counts.*
- *Temperature – PH – D.O – E.C – T.D.S – S.S – alkalinity.*
- *NO<sub>2</sub> – NO<sub>3</sub> – NH<sub>4</sub> – PO<sub>4</sub> – SO<sub>4</sub>.*
- *Ca – Mg – Na – K*
- *BOD – COD*

Also, there is periodical monitoring for industrial activities in coastal basin (one time per year) to strait the pollution resources and combat it. This analysis includes chemical and bacteriological analysis.

### Environmental Problems from the (MOI) viewpoint:

- The (PCD) in Lattakia has identified three primary environmental problems in the coastal basin, Namely:
- near-shore water pollution.
- river pollution caused by discharge of untreated domestic and industrial waste.
- solid waste arbitrary littering.
  
- Although, there is a wide range of pollutants in the near shore, bacterial contamination is a good indicator of water quality, particularly, with respect to health risks associated with swimming.
  
- In addition to water pollution at beaches there is a problem with sand excavation, large quantities of sand are regularly removed from beaches for use in construction, actually there is periodical monitoring to prevent this violation, but up to date there has only been limited success in controlling this violation.
  
- Domestic and industrial waste water is discharged directly to rivers and streams; thus, there are regular problems associated with surface water quality, particularly close to the sea.
  
- Numerous water supply wells in the basin have bacteriological contamination as a result of polluted surface water infiltration. There are some locations of sea water intrusion into groundwater resulting in increased salinity.
  
- The coast nearly Baniyas refinery is polluted by oil wastes, which consider the most important factor leads to marine Environment degradation.
  
- The states of olive squeezer in coastal zone still in its bad situation, where its waste water discharge directly through sewers into environment (soil, river, sea,..).

Procedures:

- (MOI) has not the authority to penalize polluters, but it generally coordinates with concerned ministries as Ministry of Local Administration – Ministry of Industry – Ministry of Oil and Mineral Resources, to take the necessary arrangements to control pollution, they dispatch a message to polluters to comply with regulations, then they send a warning note .... at final stage they closed the polluting activity.
- (MOI) has submitted a draft of a new law which give them the authority to:
  - Establish an officers center related to (MOI)
  - Control pollution resources.
  - Advice polluters on ways of reducing pollution .
  - Penalize polluters who caused damage to environment.

## **Ministry of Transportation(MOT):**

The General Directorate of Harbor (GDH) in the Ministry of Transportation is the authorized sector for marine environment protection affairs.

There are many directorates and departments, which related to (GDH) as following:

- Lattakia harbor directorate (commercial – sailing – fishing)
- Tartous harbor directorate (commercial)
- Jableh harbor department (sailing – fishing)
- Baniyas harbor department (petroleum port)
- Arwad harbor department (sailing – fishing)

Many posts which distributed along the coast, are related to the mentioned directorates and departments.

### Tasks:

**1- Inspection procedures** of ships and boats (commercial – sailing – fishing) this include:

- Granting of technical certificate in conformity with international conventions.
- Checking up the technical status of the ships (mechanical status – wireless transmitter – ships hull – safety equipment – pollution in the ships.. )
- Enforcing of the penalty against violatives of marine law.

**2- Sea water monitoring:** there is many posts related to (GDH), it's consisting of monitoring network, which cover the coastline.

The tasks of each post summarized by daily inspection procedures of any problems as (emergency pollution – oil spots – solid waste – over fishing – illegal functions – sand extraction).

Usually, technical officer in the post inform (GDH) about any emergency pollution caused by oil spots either it was from marine water or land – based sources.

**3- Pollution combating:**

In the case of existing of oil spots in marine water, the officers in posts take the necessary arrangement to eliminate or reduce pollution by simple tools for cleaning sands in cooperation with other national concerned sector, but these preliminary procedures are not enough to control pollution because of shortage in available capacity and available equipments.

### Legislation:

Ministry of Transportation representative by (GDH) in cooperation with Ministry of Environment take the initiative to propose a new legislation in conformity with international convention, which aims to protect marine environment from pollution arising from ships.

In this concern we could refer to the law No (10) of the year (1972), which dedicated to prevent marine pollution from petroleum derivatives that spilling from ships.

(GDH) is the authorized institution that executes the concerned rules in cooperation with other concerned sectors.

### Requirements:

The requirements are concentrated on:

- supplying GDH with materials and equipments needed to combat marine pollution, as:
  - Chemical dispersants
  - Chemical absorbents
  - Floating booms
  - Vacuum pumps
- Improving the early alerting equipments.
- Improving wireless transmitter equipments.
- Improving and updating of prevailing laws and legislations.

## **Ministry of Housing and Utilities (MOHU):**

The (MOHU) has three key environmental responsibilities:

- Providing potable water to all major settlements.
- Collecting and disposing of sanitary wastes.
- Supervising urban land use and issuing building permits.

The concerned directorate in our subject is the sanitary waste directorate of (MOHU) which is responsible for constructing sewerage networks in accordance with the local master plan and choosing a suitable waste discharge sites if there is no treatment plant.

In addition, it should develop management plans and design treatment plants for cities, towns and small residential communities and build and manage these plants.

In the majority of the coastal communities the sewage network exists as a combined system for both industry and domestic, and connecting approximately 60% of the population. Sewage in the network remains untreated and is discharged directly into water courses and subsequently to the sea.

Thus the immediate action should be establishing waste water treatment plants in Lattakia and Tartous and making researches for treatment plants in the big communities of Baniyas, Jablah, Safita...

## **Ministry of Industry (MOIN)**

The (MOIN) is responsible for overseeing the operation of those industries which because of their strategic importance to the national economy, are reserved for the public sector .

These comprise approximately (100) industries including some of the heaviest polluters such as cement, sugar, food, textiles, and chemicals. The directorate of scientific and technical affairs supervises issues of pollution control, safety, and health.

The directorate works jointly with the environment committees within each of public sector industries and with the local environmental committees in the governorate to provide guidelines for environmental matters, such as pollution prevention and control.

## **Ministry of Oil and Mineral Resources (MOMR)**

The MOMR is responsible for the important oil industry as well as the exploitation of other mineral resources. Within the MOMR the general establishment for geology and mineral resources includes a directorate of environmental geology and land use, which provides support for geo-environmental studies and planning. The directorate performs geo-environmental surveys, producing maps for geo-engineering, soil, water resources mineral deposit, and pollution sources.

## **State Planning Commission (SPC)**

The SPC is the government agency responsible for overall development planning. To carry out this responsibility, the SPC prepares the five year plan which sets out the government development priorities and identifies specific projects the government will undertake to meet these priorities, the seventh five-year plan [1990-1995] was the first to identify and address environmental issues specifically. In preparing this plan, the SPC conducted a survey of environmental problems in Syria and identified a number of environmental priorities.

As a result, the plan contained an order requiring environmental reviews and approval for industrial projects that may have negative impact on the environment.

Second, the plan committed to government to constructing wastewater treatment plant for major urban centers.

When a violation is verified the responsible authority takes several actions beginning with fines and temporary closure followed by Jailing.

## **Conclusion**

After reviewing of guidelines for environmental inspection, we can refer to the most essential contents from our viewpoint as follows:

- 1 - Inspection strategy (How inspections should be made).*
- 2 - Types of environmental inspections (regular – extra ordinary).*
- 3 - Responsible bodies (national level, local authority).*
- 4 - Plans for environmental inspections (what plans should be made).*
- 5 - Enforcement management system (from compliance information into enforcement actions).*

Finally, we could summarize and prioritize our requirements as follows:

- 1- Developing of environmental legislation considering that establishing of environmental inspection system is the most important subject.*
- 2- Capacity building and raising the scientific qualifications of inspectors.*
- 3- Improving the environmental laboratories which serving the inspection procedures, and supply it with required materials and equipment.*

Constantly, we are seeking to cooperate with MAP and looking for its support to protect our marine environment.



**TUNISIA**

**REUNION DU RESEAU INFORMEL SUR LE RESPECT ET  
L'APPLICATION EFFECTIVE DES REGLEMENTATIONS EN  
VIGUEUR EN MEDITERRANEE EN MATIERE DE LUTTE CONTRE  
LA POLLUTION RESULTANT DE SOURCES ET ACTIVITES  
SITUEES A TERRE .  
Mars 2001**

**RAPPORT DE LA TUNISIE**

## **Introduction**

La Tunisie déploie depuis bientôt quatre décennies des efforts considérables pour réaliser son développement économique et social. Elle s'est employée tout d'abord à asseoir une infrastructure économique capable de favoriser le développement en jetant les bases d'une industrie destinée à valoriser les richesses nationales et à améliorer l'exploitation des potentialités agricoles.

Cette stratégie économique a permis de donner une impulsion à la croissance et à l'emploi, dans le domaine industriel en particulier. La Tunisie a ainsi pu se doter progressivement d'un tissu économique relativement varié qui a permis la consolidation de la production nationale.

Cependant, et en dépit des efforts réalisés par l'économie tunisienne depuis quelques années, la Tunisie se trouve confrontée à un certain nombre de défis majeurs dont la création d'emplois, le développement régional, la maîtrise de la technologie, la consolidation des équilibres extérieurs et, enfin et surtout, la prise en compte des problèmes environnementaux.

Ainsi devant la diversification et l'accroissement réguliers de l'économie en Tunisie, ne tenant pas compte d'une manière adéquate des conséquences sur l'environnement, le pouvoir public s'est penché pour résoudre ces problèmes de point de vue réglementation et institution.

la première réponse institutionnelle à la prise de conscience des besoins et des problèmes environnementaux, a été la création en 1978 de la commission Nationale de l'environnement (CNE) en tant que mécanisme de coordination chargé de définir et élaborer une politique nationale de l'environnement dans le cadre de développement économique et social. Cette commission a été à l'origine de la création dans plusieurs départements ministériels de cellules et directions chargées de problèmes d'environnement.

Ainsi, la gestion de l'environnement industriel a été confiée au Ministère de l'Economie Nationale et précisément à la Direction de l'Environnement, Normes et Qualités (DENQ).

Aussi, l'environnement agricole est du ressort du Ministère de l'Agriculture par le biais de sa Direction Générale des Forêts.

L'environnement urbain a été attribué à la direction générale des collectivités publiques et locales sous tutelle du Ministère de l'Intérieur.

Toutefois la commission nationale de l'environnement (CNE) ayant des prerogatives se limitant à jouer le rôle de consultant auprès des pouvoirs publics ,serait à l'origine de la création de l'Agence Nationale de Protection de l'Environnement, en 1988.

La Tunisie qui est convaincue du fait que les impératifs du développement sont loin d'être contradictoires avec les exigences de la protection de l'environnement et elle œuvre avec beaucoup d'ardeur pour concilier le développement et l'environnement car il ne peut y avoir de développement durable sans une utilisation rationnelle des ressources et des actions préventive et curative contre toutes les formes d'agression.

Ce qui est récent, c'est que leur appréhension, leur relation au développement socio-économique, leur traduction en termes d'actions et de moyens ont gagné en cohérence.

C'est ainsi que la protection de l'environnement est devenue une priorité dans le plan de développement économique et social

Cette priorité se reflète dans l'évolution des crédits alloués directement pour la protection de l'environnement

Cela se traduit par une stratégie nationale qui s'est fixée comme objectifs :

- de préserver les équilibres globaux de l'environnement,
- de confiner les phénomènes de pollution dans des limites acceptables, définies par des normes et soumises à un contrôle permanent,
- de faire du citoyen un partenaire actif dans la protection de son environnement,
- de réhabiliter les zones polluées en associant tous les partenaires et notamment le secteur privé.

L'effort doit porter sur la cohérence globale du système de protection et sur son effectivité. Cette cohérence commence à s'organiser autour de principes directeurs.

Ces principes ne sont pas des règles très précises ,mais ils indiquent la ligne à suivre même pour des pays ayant atteint des stades de développement différenciés : les seuils de tolérance d'une pollution ou les standards peuvent en effet changer d'un pays à l'autre, mais le même principe sera respecté. Ces principes s'organisent ou se cristallisent, soit à partir des Conventions Internationales ratifiées par la Tunisie qui ont aux termes de la Constitution valeur supérieure à la loi interne, soit à partir des textes de droit interne qui les énoncent de manière plus ou moins claire. Il s'agit essentiellement du principe de prévention, du principe pollueur payeur, du principe d'information et du principe de précaution. Il faudrait sans doute ajouter le principe de coopération nécessaire pour les pays en voie de développement.

## **I- LES DIFFERENTS INTERVENANTS : LEURS ROLES ET OBJECTIFS**

En vue d'une meilleure protection de l'environnement , la Tunisie a procédé à la création de nouveaux organismes spécialisés en matière d'environnement et à la révision des prérogatives de certains organismes existants , nous en citons les principaux :

### **A ) Une institution chargée de l'environnement .**

#### **Le Ministère de l'Environnement et de l'Aménagement du Territoire :**

A partir de 1991, les pouvoirs publics ,conscients de l'ampleur de la tâche de l'ANPE, ont décidé la création du **Ministère de l'Environnement et de l'Aménagement du Territoire(MEAT)**

Ce ministère est chargé de proposer en collaboration avec les autres ministères et organismes concernés, la politique de l'Etat dans le domaine de la protection de l'environnement et de la nature, de l'amélioration du cadre de vie et de l'aménagement du territoire et de veiller à sa mise en œuvre.

En effet Le Ministère de l'Environnement et de l'Aménagement du territoire anime et coordonne les actions de l'Etat dans le domaine de l'environnement et de la conservation de la nature y compris les actions de contrôle de prévention, de réduction ou de suppression de la pollution et des nuisances et de tous les risques touchant l'environnement. En outre le Ministère élabore en collaboration avec les ministères et les organismes concernés les normes de rejets des déchets et des émissions provenant des activités industrielles urbaines....et veille à leur mise en œuvre .

Les administrations et les établissements publics prêtent leur concours aux services compétents du Ministère de l'Environnement et de l'Aménagement du Territoire pour l'accomplissement de leur mission de prévention des risques et de lutte contre la pollution et les nuisances.

Le Ministre de l'Environnement et de l'Aménagement du Territoire est chargé de prendre toutes mesures de coordination de nature à améliorer la qualité et l'efficacité de l'action de l'Etat dans les domaines susvisés, ainsi que celles qui peuvent être nécessaires à l'information du public.

**Des structures spécialisées sous tutelle du ministère de l'environnement et de l'aménagement du territoire .**

## 1) L'Office National d'Assainissement(ONAS) :

Créé en 1974, il a pour mission la gestion du secteur d'assainissement dans les zones résidentielles, industrielles et touristiques. La loi portant sa création a été modifiée en 1993 pour le charger également de la lutte contre la pollution hydrique dans les zones de son intervention , notamment dans les périmètres communaux et les zones de développement touristique et industriel.

Les agents de l'ONAS assermentés peuvent constater des infractions par des procès verbaux, conformément aux dispositions du code de procédure pénale. Ces procès verbaux sont transmis au procureur de la République territorialement compétent, aux fins des poursuites, par le MEAT. Parmi les infractions ,on peut noter celles qui ont un lien avec la pollution telle que introduire dans les ouvrages d'assainissement , des matières , produits et liquides et tous autres objets qui peuvent obstruer les conduites , provoquer des nuisances ,affecter l'atmosphère ,émettre des vapeurs ou des gaz toxiques , inflammables ou explosifs, entraver de quelque manière que ce soit le bon fonctionnement des ouvrages d'assainissement et compromettre l'hygiène , et la salubrité publique , et de façon générale polluer l'environnement.

Le texte réglementaire prévoit des peines et sanctions encourues par les personnes ayant commis les infractions sus citées et qui sont à la fois pécuniaires et de privations de liberté.

Toutefois. c'est à la tutelle(MEAT) de transmettre les dossiers des contrevenants au Procureur de la République ou d'ordonner la transaction .

## 2) L'Agence Nationale de Protection de l'Environnement :

Bien que , plusieurs intervenants sont chargés d'effectuer des inspections qui ont un attrait environnemental ,toutes fois , c'est l'ANPE créée en 1988 qui assure un contrôle préventif et un contrôle curatif en vue de protéger l'environnement de toute source de dégradation et de réparer tout dommage occasionné à ce dernier.

L'Agence Nationale de Protection de l'Environnement, comme **opérateur principal dans la lutte contre toutes les sources de pollution et de nuisance, et contre toutes les formes de dégradation de l'environnement**, a notamment pour mission :

- de participer à l'élaboration de la politique générale du gouvernement en matière de lutte contre la pollution et de protection de l'environnement, et à sa mise en œuvre par des actions spécifiques et sectorielles .
- de proposer aux autorités compétentes toute mesure revêtant un caractère général ou particulier et destiné à assurer la mise en œuvre de la politique de l'Etat en matière de lutte contre la pollution et de protection de l'environnement, et notamment les mesures tendant à

assurer la préservation de l'environnement et à renforcer les mécanismes qui y conduisent, et en général à proposer les mesures de prévention des risques et des catastrophes naturelles ou industrielles, d'instruire les dossiers d'agrément des investissements dans tout projet visant à concourir à la lutte contre la pollution et la protection de l'environnement, et d'assurer le contrôle et le suivi des projets polluants et des installations de traitement des dits rejets,

Dans le cadre de l'accomplissement de sa mission, l'Agence Nationale de Protection de l'Environnement peut intervenir sur l'ensemble du territoire tunisien et notamment dans les espaces maritimes relevant de la souveraineté ou de la juridiction tunisienne.

Dans le cadre de ses interventions en matière de protection de l'environnement, l'Agence est habilitée à conclure des conventions avec les organismes ou entreprises concernés en vue d'arrêter un programme d'élimination des rejets polluants.

Les établissements qui acceptent de telles conventions peuvent bénéficier d'avantages fiscaux ou d'une aide financière dont le montant et les conditions d'octroi sont fixés par décret.

Les personnes physiques ou morales et notamment les établissements industriels, agricoles ou commerciaux qui endommagent l'environnement ou dont l'activité cause une pollution à l'environnement par des rejets solides, liquides, gazeux ou autres sont tenus à l'élimination, à la réduction et éventuellement à la récupération des matières rejetées ainsi qu'à la réparation des dommages qui en résultent.

Les experts contrôleurs telle que défini par le décret de 1990, portant leur statut de ce corps d'inspection ; comprend :

- les agents de l'Agence Nationale de Protection de l'Environnement spécialement habilités à cet effet ;
- les agents du secteur public habilités à assurer la mission de contrôle et qui sont nommés en vertu d'un arrêté du Premier Ministre, pris sur proposition de l'Agence Nationale de Protection de l'Environnement et approbation du Ministre concerné.

Les experts contrôleurs de l'Agence Nationale de Protection de l'Environnement sont chargés de contrôler le fonctionnement, l'efficacité et le rendement des installations de traitement des rejets ou de leur élimination, mises en place par les établissements visés à l'article 8 de la loi n°88-91 du 2 aout 1988.

A cette fin, ils contrôlent notamment la qualité bactériologique, chimique et microbiologique des effluents déversés dans l'environnement par ces établissements ou en émanant.

Les experts contrôleurs sont assermentés. Ils sont soumis au secret professionnel et sont tenus de ne divulguer aucune information recueillie, lors de leurs opérations de contrôle.

L'expert contrôleur effectue tout prélèvement et recueille tout échantillon nécessaire à l'accomplissement de leur tâche. Il rédige et signe un procès-verbal à l'occasion du constat de toute infraction à la législation relative à la protection de l'environnement, et particulièrement aux normes tunisiennes concernant la pollution, ainsi que toute violation des dispositions de la loi précitée n° 88-91 du 2 août 1988. Ces procès verbaux feront foi jusqu'à ce qu'une preuve contraire soit apportée aux frais matériels qui y sont constatés, et ce conformément aux dispositions de l'article 154 du code de procédure pénale.

Le texte réglementaire prévoit les pénalités encourues par les personnes ayant commis les infractions sus citées et qui sont pécuniaires.

Toutefois, il revient à la tutelle (MEAT) de transmettre les dossiers des contrevenants au Procureur de la République ou d'ordonner la transaction.

Annuellement, les experts contrôleurs effectuent environ 6000 opérations de contrôle par an. Ces opérations sont soit systématiques :

- sur programme préétabli : visite de suivi suite l'accord sur les études d'impact ou lors des campagnes de production agricole ou de suivi de réalisation du contrat programme,
- sur demande : suite aux plaintes,
- suite à une pollution accidentelle.

## **B ) Des ministères sectoriels.**

### **Le Ministère de l'intérieur**

Le Ministère de l'intérieur assure la tutelle des collectivités publiques locales, il est ainsi concerné par l'ensemble des aspects de la gestion des services communaux dont la gestion des déchets solides urbains. La direction générale des collectivités publiques locales mène certaines activités telles que :

La mise en œuvre du programme national de la propreté et de protection de l'environnement et le suivi de son application par les communes.

Elle joue un rôle important en matière de respect du plan d'aménagement du territoire et de contrôle de certaines sources de pollution, notamment par les déchets.

La loi de 1975 portant promulgation de la loi organique des communes a prévu que les communes ont pour mission entre autre l'application des règles sur les établissements dangereux, insalubres ou incommodes...

Des agents assermentés relevant des communes, jouissant des prorogatifs de la police judiciaire dressant des procès verbaux suite au



constat d'infractions à l'encontre de pollueurs . Les communes peuvent ordonner la fermeture, avec le consentement du Gouverneur de la région, des établissements en infraction se situant sur leur périmètre s'il s'avère avoir une répercussion grave sur la population.

La police ainsi que la garde nationale ,chacun dans le lieu d'accomplissement de leur devoir et en cas de constat de pollution, surtout instantanée ,peuvent dresser des procès verbaux et les transmettre à Monsieur le Procureur de la République pour des poursuites judiciaires . Ce dernier peut demander à l'Agence Nationale de Protection de l'Environnement de formuler sa demande.

### **Le Ministère de l'agriculture.**

Le Code des Eaux promulgué par la loi de 1975,a défini le domaine d'intervention des agents du ministère de l'agriculture .

Ces agents assermentés et jouissant des prorogatifs de la police judiciaire ,dressent des procès verbaux à l'encontre des pollueurs suite à l'inspection du domaine public hydraulique .Ils luttent contre la pollution des eaux dans le but de satisfaire ou de concilier les exigences :

- < De l'alimentation en eau potable ;
- < De la santé publique ;
- < De l'agriculture , de l'industrie , et de toutes activités humaines d'intérêt général ;
- < De la vie biologique du milieu récepteur et spécialement de la faune piscicole ainsi que les loisirs des sports nautiques et de la protection des sites ;
- < De la conservation et l'écoulement des eaux.

Elle s'applique aux déversements ,écoulement, rejet, dépôts directs ou indirects de matière de toute nature et plus généralement à tout fait susceptible de provoquer ou d'accroître la dégradation des eaux en modifiant leurs caractéristiques physiques , chimiques , biologiques ou bactériologiques , qu'il s'agisse d'eaux superficielles ou souterraines ou des eaux marines dans les limites des eaux territoriales .

Le texte réglementaire prévoit les peines et sanctions encourues par les personnes ayant commis les infractions sus- citées et qui sont à la fois pécuniaires et de privations de liberté.

### **Le Ministère de l'industrie.**

Le code de travail tunisien impose aux des manufactures ,ateliers, usines,magasins ,chantiers et d'une manière générale ,tous les

établissements qui présentent des causes de danger ou des inconvénients ,soit pour la sécurité, la salubrité ou la santé du personnel ou du publique soit encore pour l'agriculture ; classés ou non la surveillance par des agents spécialisés relevant des ministères chargés de l'industrie,de la santé publique, de l'environnement et de l'aménagement du territoire et autres.

Des agents spécialisés et assermentés relevant du ministère de l'industrie inspectent ces établissements et doivent prendre les mesures nécessaires en cas de danger pour le faire cesser. Le texte réglementaire prévoit des peines et sanctions encourues par les personnes ayant commis des infractions qui peuvent engendrer un danger ou un préjudice à la sécurité et la santé et qui sont à la fois pécuniaires et de privations de liberté

Ces établissements peuvent être fermés définitivement par arrêté du ministre de l'industrie, pris après avis du comité spécial des établissements dangereux ,insalubres ou incommodes au cas ou le danger ne peut être supprimé.

Annuellement , les contrôleurs effectuent environ 3500 opérations sur les établissements et installations classés .

### **Le Ministère de la santé publique**

Le décret de 1981 ,portant organisation des services relevant du ministère de la santé publique ,a chargé la direction de l'hygiène du milieu et de la protection de l'environnement de la mission du contrôle de l'environnement et de la lutte contre la pollution . Cette tâche fut confiée à des agents assermentés , jouissant des prorogatives de la police judiciaire .

Ils inspectent entre autres les réseaux d'égouts et les stations d'épuration et d'évacuation, les eaux de baignades ainsi que des eaux usées d'irrigation .

### **D ) Des structures représentatives .**

- La Commission Nationale du Développement Durable(CNDD)  
Elle complète le cadre institutionnel spécialisé mis en place depuis 1988 pour la protection de l'environnement et la mise en œuvre du développement durable.

**La commission est une instance de coordination entre les différents acteurs nationaux de développement. Son but est de concilier développement économique et social et préservation des ressources naturelles.**

La CNDD ,de part ces attributions , joue le rôle d'arbitrage entre les différents acteurs et intervenants qui communiquent toutes les informations sur leurs activités en matière de recherche, de contrôle et de prévention des risques dans les domaines de leur compétence par l'intermédiaire du Ministère de l'environnement et de l'Aménagement du Territoire .

Elle constitue de ce fait une instance fondamentale adoptant une approche du développement intégrant le droit des générations futures à un environnement sain et viable.

La mission centrale de cette commission est l'élaboration et la mise en œuvre d'un programme national de développement durable et un Agenda 21 tunisien intégrant la notion de durabilité dans tous les secteurs de l'activité économique et sociale.

## **II- LES INSTRUMENTS D'INTERVENTION**

### **II-1 La réglementation environnementale.**

La réglementation environnementale se caractérise par l'obligation de prévenir la pollution et les atteintes à l'environnement, et l'obligation d'arrêter la pollution et réparer les dommages occasionnés.

#### **A ) Des mesures préventives**

Pour prévenir la pollution le législateur tunisien a mis en place des procédures à savoir :

- Les procédures d'approbation
- ◀ Les procédures d'autorisation
- ◀ Les procédures d'interdiction

#### **Les procédures d'approbation**

Par application de l'article 5 de la loi du 2 Août 1988 qui dispose: " une étude d'impact sur l'environnement doit être présentée à l'Agence avant la réalisation de toute unité industrielle, agricole ou commerciale dont l'activité présente, de par sa nature ou en raison des moyens de production ou de transformation utilisés ou mis en œuvre, des risques de pollution ou de dégradation de l'environnement ."

Le décret d'application de cet article prévoit dans son article 2 que l'autorité ou les autorités compétentes ne peuvent délivrer l'autorisation pour la réalisation d'une unité industrielle ou autre qu'après avoir constaté que l'Agence Nationale de Protection de l'Environnement ne s'oppose à sa réalisation.

Le même Article ajoute que le maître de l'ouvrage ou le pétitionnaire ne peuvent se prévaloir d'une autorisation administrative délivrée sans l'approbation de l'Agence. Ainsi l'approbation d'une étude d'impact par l'autorité compétente est considérée dans la

réglementation tunisienne comme une condition de validité de l'autorisation.

Les études d'impact sont préalables à toute autorisation administrative exigée pour la réalisation d'une unité industrielle ou autre.

Le contenu de l'étude d'impact doit refléter l'incidence prévisible de l'unité sur l'environnement.

Le décret du 13 mars 1991 a déterminé les éléments que doit contenir l'étude d'impact et a énuméré dans ses annexes les projets soumis à cette étude.

Dans le cas où l'étude est approuvée, **l'ANPE par l'intermédiaire de ses experts contrôleurs exerce un contrôle préventif visant à s'assurer que l'industriel a exécuté les engagements mentionnés dans l'étude d'impact.**

L'article 208 de la loi n° 88-20 du 13 avril 1988 portant refonte du code forestier stipule que : » Lorsque des travaux et des projets d'aménagement sont envisagés et que par l'importance de leurs dimensions ou leurs incidences sur le milieu naturel, ils peuvent porter atteinte à ce dernier , ces travaux et projets doivent comporter une étude préalable d'impact établie par les institutions spécialisées permettant d'en apprécier les conséquences « .

Les travaux et projets d'aménagements indiqués ci-dessus ne peuvent être entrepris qu'après autorisation du ministre de l'agriculture .

L'ANPE reçoit en moyenne 1200 études d'impact par an adressées par des promoteurs .

### **Les procédures d'autorisation.**

Les pouvoirs publics et la population se sont toujours soucieux des industries polluantes qui sont génératrices de déchets gazeux, liquides ou solides. Ainsi les autorités publiques ayant la charge d'assurer la sécurité et la salubrité publiques ont été investies par le législateur du pouvoir d'autoriser les établissements classés.

La loi n° 96-41 du 10/06/96 relative aux déchets et au contrôle de leur gestion et de leur élimination a prévu de multiples autorisations qui concernent notamment :

- L'utilisation de produits recyclés dans la fabrication d'emballages destinés à contenir directement des produits alimentaires ( autorisation du Ministre chargé de la santé publique, après avis du Ministre chargé de l'environnement).
- L'ouverture de décharges et de centres de collecte, de tri et de recyclage (autorisation du Ministre chargé de l'environnement).
- Les activités de collecte, de tri, de transport, de stockage, de traitement, de valorisation et d'élimination des déchets (autorisation du Ministre chargé de l'environnement).

- L'exportation et le transit des déchets dangereux (autorisation du Ministre chargé de l'environnement).

### **Les procédures d'interdiction**

La réglementation tunisienne interdit le rejet des déchets, on cite à titre d'exemple :

- L'article 108 du code des eaux prévoit qu'il est interdit l'introduction, le déversement ou l'immersion dans les eaux de la mer des matières de toutes natures, en particulier des déchets domestiques ou industriels susceptibles de porter atteinte à la santé publique ainsi qu'à la faune et à la flore marines et de mettre en cause le développement économique et touristique des régions côtières.

L'article 110 du code des eaux interdit d'effectuer tout dépôt en surface susceptible de polluer par infiltration les eaux souterraines, ou par ruissellement les eaux de surface.

L'article 7 de la loi 1996 relative aux déchets prévoit que l'incinération des déchets en plein air et leur utilisation sont interdites à l'exception des déchets des végétaux.

L'article 32 de loi de 1996 interdit d'enfouir les déchets dangereux et de les déposer dans des lieux autre que les décharges qui leur sont réservés , les centres de stockage autorisés conformément aux textes en vigueur.

L'article 39 prévoit que l'importation des déchets dangereux est strictement interdite.

L'article 221 du code forestier dispose << Sont interdites ou font l'objet de restriction , toutes actions susceptible de nuire au développement naturel de la faune et de la flore et notamment la chasse, la pêche, les activités agricoles forestières et pastorales industrielles , minières , publicitaires et commerciales, l'extraction de matériaux concessibles ou non , l'utilisation des eaux, la circulation du public quelque soit le moyen employé, la divagation des animaux domestiques à l'intérieur d'un parc national ou d'une réserve naturelle ainsi que leur survol par aéronefs.

Devant les dispositions légales interdisant les rejets, de nouvelles dispositions ont vu le jour pour obliger à la dépollution et à la réparation du dommage.

### **B) Les mesures curatives**

L'article 8 de la loi du 2 aout1988 impose à l'industriel et à toute personne physique ou morale de limiter, réduire et éventuellement de récupérer la matière polluante rejetée, ainsi que la réparation du dommage qui en résulte.

La loi de 96 sur les déchets reconduit ce principe en le renforçant, elle prévoit que toute personne dont l'activité produit des déchets ou qui détient des déchets dans des conditions susceptibles d'avoir des effets négatifs sur le sol, la flore ou la faune, de causer la dégradation des sites et des paysages ou de polluer l'air ou l'eau, ou d'engendrer des nuisances sonores ou des odeurs et d'une manière générale de porter atteinte à la santé publique ou à l'environnement, est tenue de les éliminer conformément aux dispositions de la loi.

**Afin d'obliger les contrevenants à prendre les mesures curatives nécessaires , le législateur tunisien a mis en place un système de contrôle assuré par des experts contrôleurs** nantis de pouvoir de police judiciaire, ils sont habilités conformément à la loi à exercer le contrôle et à constater les infractions .

## **II - 2 Les incitations**

Les mesures d'incitation financière constituent un élément important de toute politique de préservation de l'environnement, ces mesures qui complètent les précédentes sont : Les avantages fiscaux, les fonds et les prix .

### **- Les avantages fiscaux :**

Le terme aide financière désigne diverses aides qui ont pour but d'inciter le pollueur à modifier son comportement ou qui sont octroyées à des entreprises éprouvant des difficultés à respecter les normes imposées . Ces aides financières peuvent prendre la forme de subventions, d'allègements fiscaux, d'amortissement favorable sur le plan comptable, d'exonération fiscale, notamment du droit de douane L'article 37 de la loi n° 93-120 du 27 décembre 1993 portant promulgation du code d'incitation aux investissements, a prévu des avantages fiscaux accordés après avis de l'ANPE et de l'approbation de la commission instituée par le décret n° 94-1191 du 30 mai 1994 et siegant au Ministère des Finances

### **L'octroi de dons et de prêt bonifié:**

A côté de ces avantages fiscaux le législateur tunisien a prévu d'autres moyens d'incitation à savoir le Fonds de Dépollution le Fonds de lutte contre la désertification et le fonds de l'environnement touristique .

Ces fonds sont destinés à l'octroi de dons et de prêt bonifié.

Le Fonds de dépollution, crée par la loi n° 92-122 du 29 décembre 1992 portant loi de Finances pour la gestion 93 et notamment les articles 35-37 , est destiné à financer les projets de protection de l'environnement et à aider les entreprises à réaliser des investissements anti-pollution et à mettre en œuvre des mesures d'incitation à l'utilisation de la technologie non polluante .

Le décret n° 93-2120 du 25 octobre 1993 a fixé les conditions et les modalités d'intervention du FODEP . Cette aide est accordée sous forme de subvention plafonnée à 20% du coût de l'investissement de dépollution , ainsi qu'un crédit bancaire bonifié, remboursable sur 10 ans et couvrant 50% du coût du projet.

Ce décret d'application de la loi portant institution du Fonds démontre que le législateur tunisien a donné une priorité absolue pour le côté curatif ou pour les activités de collecte et de recyclage des déchets.

Jusqu'à ce jour ,261 projets de dépollution et de collecte et recyclage des déchets industriels ont vu le jour pour un montant total d'investissement de l'ordre de 65 millions de dinars tunisiens.

**Cet effort ne fut réaliser que grâce à l'apport des experts contrôleurs ,qui de part leur visite aux établissements ,ne cessent de sensibiliser sur les avantages de ce Fonds .**

#### **L'octroi de prix :**

D'autres moyens d'incitation sont prévus dans la réglementation tunisienne, tels que l'attribution d'un prix du Président de la République pour la protection de la nature et de l'environnement instauré par le décret n° 93-2055 du 4 octobre 1993, modifié par le décret n°96- 1248 du 15 juillet 1996.

**Sur la base des rapports établis par les experts contrôleurs sur les différents projets dans le domaine de dépollution ,l'ANPE pourrait proposer des entreprises méritantes pour le prix présidentiel .**

## **II- 3/ Les sanctions**

### **A) Les sanctions pénales**

Le droit tunisien a prévu de nombreuses sanctions pénales, selon la nature de l'infraction.

Ces sanctions consistent en l'amende, l'emprisonnement ou des deux peines ensemble .

#### **- L'amende :**

L'amende est la sanction prépondérante, elle existe dans de nombreux textes de loi.

Nous citons à titre d'exemple :

-La loi du 2 Août 88 article 11 alinéa 1 " Les contrevenants aux dispositions de l'article 8 de la présente loi et aux textes pris pour son application sont passibles d'une amende variant entre cent dinars et cinquante mille dinars selon le degré de gravité de l'infraction ».

-La Loi 99-25 du 18 mars 1999 portant promulgation du code des ports maritimes et de commerce dispose dans son article 116 qu'il << est puni d'une amende de 10.000 à 50.000 dinars et d'un emprisonnement

de 16 jours à 3 mois ou de l'une de ces deux peines toute personne qui contrevient aux dispositions des articles 20 au 24 du présent code »

### **L'emprisonnement :**

Nous citons à titre d'exemple :

- L'article 48 de la loi n° 96-41 du 10 juin 1996, relative aux déchets et au contrôle de leur gestion et de leur élimination prévoit : « les infractions aux dispositions des articles 31,32,35,39,40 et 42 relatifs aux déchets dangereux sont punies d'une peine d'emprisonnement d'un mois à cinq ans et d'une amende d'un montant de 10.000 à 500.000 dinars : »

Outre ces peines , le ministre chargé de l'environnement ne peut pas conclure des transactions avec les auteurs de ces infractions.

- L'article 159 du code des eaux prévoyant que " Celui qui ayant été condamné pour l'une des infractions prévues par la présente loi ou les décrets et les arrêtés pris pour son exécution a commis à nouveau la même infraction dans un délai de douze mois à compter du jour où la condamnation est devenue définitive, est condamné, sauf le cas de bonne foi dûment établie, au maximum des peines d'emprisonnement et d'amende, ou au maximum de l'une de ces deux peines seulement, ces peines peuvent être portées jusqu'au double.

### **B) Les sanctions civiles**

L'article 8 de la loi n°92-88 du 2 Août 88 telle que modifiée par la loi n° 92-115 du 30 novembre 1992 dispose que << Les personnes physiques ou morales et notamment les établissements industriels, agricoles ou commerciaux qui endommagent l'environnement, ou dont l'activité cause une pollution à l'environnement par des rejets solides, liquides ou gazeux ou autres sont tenus à l'élimination, à la réduction et éventuellement à la récupération des matières rejetées ainsi qu'à la réparation des dommages qui en résultent.

Un décret fixera les conditions d'application du présent article et notamment les normes et prescriptions générales applicables aux rejets polluants mentionnés ci-dessus >> .

L'article 13 de la même loi habilite l'ANPE << A intenter devant les tribunaux , toute action visant à obtenir la réparation des atteintes aux intérêts collectifs qu'elle a pour mission de défendre >> .

Le code des obligations et des contrats a prévu dans son article 99 que les voisins ont action contre le propriétaire d'établissement insalubre ou incommode pour demander soit la suppression de ces établissements , soit l'adoption des changements nécessaires pour faire



disparaître les inconvénients dont ils se plaignent. L'autorisation des pouvoirs compétents ne saurait faire obstacle à l'exercice de cette action.

L'article 101 du code des obligations et des contrats dispose que " l'acquiescement prononcé par un tribunal pénal ne préjuge pas la question des dommages civils résultant du fait qui a donné lieu aux poursuites . La même règle s'applique au cas d'extinction de l'action pénale par le décès du prévenu ou par amnistie ».

On constate que deux parties peuvent agir seulement en vue de demander la réparation du dommage civil à savoir :

- 1- L'ANPE par application de l'article 13 de la loi de 2 Août 1988.
- 2- Les voisins par application des articles 99 et 101 du code des obligations et des contrats .

### **C) Les sanctions administratives**

Le législateur tunisien a permis à certains organismes de prendre des sanctions administratives à l'égard de certains contrevenants au droit de l'environnement .

Ce genre de sanction varie selon la gravité de l'infraction . Ces sanctions peuvent être de 3 sortes .

- La fermeture provisoire
- La fermeture définitive
- L'annulation de l'autorisation octroyée.
- La démolition .

**ANNEX IV**

**NEEDS OF THE COUNTRIES FOR ASSISTANCE AND SUPPORT IN THE  
STRENGTHENING OF ENVIRONMENTAL INSPECTION SYSTEMS**

**ALBANIA**

## ALBANIA

### Assessment and Feedback

Despite of the achievement, different gaps characterize the environmental inspectorate system in Albania including the relevant legal frame, administrative, technical, professional and institutional issues.

The main gaps deal with:

- A non-complete legal framework (laws on inspectorate, air, water protection, waste management, discharges standards, etc. do not yet exist )
- Differentiated regulations and guidelines for environmental inspection, their tasks, inspectorate management and organization lack completely.
- A non efficient permitting system:
  - Permit format is not appropriate
  - The condition put in permits are general and without clear targets to be achieved)
  - Lack of emission standards (hampering the permitting and inspection process)
  - There is no objection for self monitoring by industry
  - No prepared and approved checklists for preparing an application for an environmental permit.
  - No registers use to record the data from the industry
  - No database for recording permits and respective inspections
  - No law in force on EIA procedures
  - No guidelines or regulations about the needed or required information to be provided for an environmental application
  - No enough knowledge about cleaner production, cleaner technologies and end of pipe technologies.
  - Poor level of cooperation with state police
  - Poor level of cooperation with public health laboratories ( for measuring and reporting data related to the emissions)
  - No inspection on regular basis
  - No guidelines for inspector reporting.
  - Poor professional level of inspectors
  - No equipment for measuring of emissions
  - Poor logistic infrastructure for inspectors of REA (tables, cars, computers, etc).

On the basis of such an assessment, the NEA needs to improve profoundly the permitting system or the permit content and composition, and the environmental inspectorate management including all relevant components.

The NEA has elaborated a plan to improve the permitting system in such directions:

- To amend the frame law on environmental protection, chapter of permitting focusing on issues as:
  - information to be provided for an application,
- Renovation of permits each year, mutual contract specifying well defined set of conditions and industry specific conditions,
- Promote prevention at source of the pollution,

- Prepare guidelines for the minimum information to be included in the application for a permit, using an integral approach, thus the environmental compartment are interrelated and must be looked as a whole.
- To require the self-monitoring of the industry.
- Establish a data base for the issued permit, according to the sector, technology and year of production
- Establish a data base for inspections or site visits, including their findings
- Prepare a law on Environmental inspectorate, focusing on its tasks and responsibility,
- Prepare guidelines for site visit, prepare guidelines for inspection report and follow up
- Train the inspectors
- Inform the business
- Equip the inspector with the due logistics (chairs, etc)
- Equip inspectors with measuring equipments
- Strengthen the EIA structures and system
- Improve the structure of the NEA, or
- Undertake an institutional reform: add the directorate of EIA and information, whose the tasks deal with day to day inspectorate and REA management, review the EIA reporting, organize the inspections and visits, realize the data base for permits, serve as secretariat of permits commission.

**ALGERIA**

## ALGERIA

### 8. PROJETS D'AMELIORATION DES SERVICES D'INSPECTION ENVIRONNEMENTAUX

Compte tenu des travaux en cours au niveau du ministère chargé de l'environnement et relatifs à une révision/modification de la loi n°83-03 du 05 février 1983 relative à l'environnement et qui devraient aboutir en 2001, les éléments identifiés comme pouvant être d'un apport à l'amélioration de l'efficacité de la surveillance de la conformité à la législation et à la réglementation environnementale en Algérie sont :

**8.1 Développement et mise en œuvre d'un dispositif d'autocontrôle et d'autosurveillance dans le but de réduire la charge de travail des inspecteurs, de réduire les dépenses de l'Etat et de mettre en œuvre le principe du pollueur payeur en établissant un lien entre la charge de pollution générée et la taxe sur les activités polluantes ou dangereuses pour l'environnement prélevée aujourd'hui sur des bases autres que la charge de pollution.**

Ce dispositif dont l'étude a été entamée en 2000 en concertation avec les inspections, les gestionnaires de stations d'épuration publiques et les industriels, en est au stade de l'élaboration des textes réglementaires et s'appuie sur :

- le fait qu'un nombre appréciables d'industries dont certaines parmi les plus importantes notamment au niveau des zones industrielles mettent déjà en œuvre des pratiques d'autocontrôle proches de celles envisagées.
- L'autocontrôle défini comme le "contrôle des valeurs fixées par la réglementation, par l'exploitant de l'installation". Ce qui représente une surveillance de la conformité à la législation et à la réglementation environnementale.
- L'autosurveillance définie comme le "contrôle du fonctionnement de l'installation par l'exploitant". Ce qui représente un facteur de responsabilisation et un outil de gestion et d'aide à la décision dans la mesure où cette pratique permettra d'établir des bilans entrée/sortie, de détecter et d'analyser dans des délais plus courts les pointes de pollution, d'éviter par une action corrective en temps réel, au niveau des procédés de fabrication et/ou des installations de dépollution, les rejets dépassant les valeurs fixées par la réglementation.
- Un champ d'application étendu aux stations d'épuration municipales de plus de 50m<sup>3</sup>/jour et aux stations de traitement des rejets industriels y inclus les émissions atmosphériques.
- Une définition des modalités d'exécution de l'autosurveillance et de l'autocontrôle, notamment en ce qui concerne la qualification du personnel, l'obligation de mise en œuvre d'un système d'assurance de la qualité analytique (AQA) pour la réalisation des analyses ou les modalités de recours à des organismes privés (agréés) pour la réalisation de ces analyses. Les modalités d'exécution comportent également la tenue d'un registre dans lequel seront consignés les résultats de l'autocontrôle et de l'autosurveillance, ce registre étant tenu à tout moment à la disposition de l'inspecteur.
- Une définition de délais réalistes à l'expiration desquels, l'autocontrôle et l'autosurveillance devront être effectués au niveau des installations de traitement existantes.
- Une définition des infractions et des sanctions administratives à inclure dans la réglementation et des sanctions pénales à prévoir dans la législation.

**8.1.1 Besoins spécifiques en matière de mise en œuvre du dispositif d'autosurveillance et d'autocontrôle.**

a) Formations selon deux options :

- soit former directement les personnels des industries et des stations d'épuration les plus importantes et les inspecteurs dans une région pilote afin de les préparer à prendre en charge l'autocontrôle et l'autosurveillance.
- soit former des formateurs afin de démultiplier de façon autonome les compétences aussi bien au niveau des industries et des installations de traitement municipales, que des inspections.

b) Soutien à la mise en place des moyens techniques et matériels pour la prise en charge de l'autocontrôle, aspect analyses des rejets notamment, et ce dans au moins une région pilote.

**8.2 Divers projets de développement des capacités de protection de l'environnement, dans plusieurs domaines, sont en cours de mise en œuvre en Algérie avec l'appui de la coopération bilatérale et multilatérale, notamment en matière de mise en place de systèmes de négociation avec l'industrie en vue d'adopter des modèles de contrats de production propre. Ces actions se heurtent cependant aux problèmes résultant de l'application des meilleures techniques disponibles (MTD) dans la mesure où la transposition des engagements internationaux dans la législation et la réglementation nationales se répercute sur les coûts supplémentaires qu'auront à supporter les industries pour se conformer à des dispositions réglementaires sévères.**

**8.2.1** Les besoins spécifiques dans ce domaine consistent en la définition de formules concrètes et applicables dans les pays à l'est et au sud de la Méditerranée en matière d'adoption de normes réalistes, de transfert de technologies anti-pollution et/ou technologies plus propres en particulier pour les petites et moyennes entreprises ou industries (PME/PMI).

**8.3** La surveillance continue des milieux est considérée comme importante en Algérie dans la mesure où l'actualisation des informations sur l'état de l'environnement, qui est à la base de la formulation des politiques et des stratégies environnementales, est en retard. Ces données sur les milieux ne peuvent être produites en l'état actuel, que par des institutions soutenues techniquement et financièrement par l'Etat. C'est à ce titre qu'un projet de mise en place d'un organe jouissant d'une autonomie de fonctionnement mais sous tutelle du ministère chargé de l'environnement a été engagé. Cet organisme sera notamment habilité à mettre en place des réseaux d'observation, de mesure de la pollution et de surveillance des milieux ainsi que de diffuser l'information environnementale au public.

**8.3.1** Les besoins spécifiques dans ce domaine consistent en un renforcement des structures de laboratoires existantes et desquelles s'appuient actuellement les inspecteurs pour réaliser leurs contrôles. Ces structures nécessitent un renforcement en matière d'analyses physico-chimiques et biologiques et en des formations spécifiques sur les méthodes d'analyses applicables en eau de surface ainsi que sur les méthodes d'assurance de la qualité analytique (AQA).



# **BOSNIA AND HERZEGOVINA**

## BOSNIA

### 7. NEEDS OF B&H ON THE SUBJECT OF ENVIRONMENTAL INSPECTORATS

In this post-war period, B&H is developing very slowly in economic, political and legal institutional building. The development of environmental policy and Cooperation between two entities, Federation B&H (FB&H) and Republic of Srpska (RS), on environment protection is improved related to the situation existing two years ago, but still the main problems are :

- inadequate legislation at the national, canton and local level,
- inadequate institutional framework and capacity necessary for the implementation of legislation,
- inadequate pollution compliance and monitoring,
- ineffective coordination between various sectors and local and national level,
- Environmental public awareness almost does not exist.

The intention of Bosnia and Herzegovina to integrate progressively into EU implies that the institutional integration of water matters into the environmental sector takes place. It would also call for mechanisms that would allow to move towards the market economy.

Several needs in B&H are recognized in context of development of environmental legislation, compliance, control and inspection procedures:

#### 1) Drafting of the Law on Environmental Protection

is currently in the process of preparation. The Law would be a framework law, containing the main principles for the protection and improvement of the environment, and for the management of natural resources. The Law will set guidelines for the drafting of environmental sector laws.

#### 2) Drafting of the Sectoral environment Laws

Legislation concerning the measures for environmental protection and the conditions for licensing would be enacted separately for each environmental sector. (water, air, solid waste management, protected areas...)

### 3) Development of Legal Procedures

#### • Licensing and Appeal Procedures

**Licensing should be based on the principles of legality, transparency and predictability. To ensure appropriate conduct of the licensing authority as well as public confidence in the legality of its actions, the principal elements of the procedure should be prescribed by Environment Law.**

The legal provisions for the environmental licensing procedure should contain the following principal elements:

- definition of the parties and the grounds on which they are entitled to right of action;
- public authorities promoting the public interest;
- proprietors or tenants of neighbouring land;
- natural or legal persons exploiting the same resource on previously issued permit;
- persons whose livelihood depends on the non-regulated use of the same resource; and
- associations representing the inhabitants of the area concerned, or promoting environmental protection, nature conservation etc.
- methods of presenting the application for public inspection (public announcement, individual notification);
- deadlines and other conditions for exercising and maintaining right of action;
- methods for the licensing authority to gain information;
- obligations of the parties to submit information;
- consequences for not observing the instructions of the licensing authority (such as dismissal of application);
- main contents of the decision; and
- the right to and method of appeal against the decision.

The decision should include the following elements prescribed by law:

- precise definition of the undertaking to which license is issued;
- precise definition of the rights and responsibilities of the permit holder;
- definition of permit conditions, including period of validity, measures of control, monitoring, and time limit for eventual re-evaluation of conditions;
- statement of reasons for decision (equally important for rejection of application);
- statement of relevant laws and sections of law; and
- advice as to the proceedings for appeal.

- Enforcement

The enforcement measures should be clearly seen as only a final resort in situations where the individual or corporation does not comply with the requirements set by the authority.

Violations would usually be detected in the regulatory routine of a respective RBB. The RBB inspector would then be responsible for initiating the enforcement procedure.

The RBB officials as part of their regulatory duties would execute the rectifying measures at the transgressor's expense. Encountering resistance, the inspectors should be entitled to executive assistance provided by the police authority. Provisions concerning these procedures should be given in the environmental Laws.

In cases of emergency with immediate risk to the human health, to the environment or to property, the RBB inspectors should have the right to order enforcement measures to be carried out immediately. When the conditions are no longer urgent, the normal procedural rules must again be observed.

- Penalties

The penal sanctions applied in the environmental sector include fines and imprisonment imposed on natural persons, fines imposed on legal persons, as well as confiscation of the profit gained and the property used in relation to the offence. All these sanctions have been adopted in the present Water Laws, and need to be maintained and developed in future legislation.

The main object of criminal sanctions is to deter violations of law. Once the illegal action has led to environmental damage, penalties are of no avail. The main efforts in environmental protection should, therefore, be concentrated on other preventive measures, such as regulation and guidance.

- Strengthening of Economic instruments

There are no specific indicators for collection efficiency, monitoring and transparency of applying of existing economic instruments. Because of that the efficiency of existing economic instruments has to be analyzed. Such an analysis should in particular shed light on the pace with which taxes, charges, and excise duties can be raised without threatening business activities as such. The analysis should also be used to design feedback mechanisms on business reactions to the applied economic instruments.

The authorities should consider applying the following instruments:

- Environmental tax differentiation on leaded and unleaded petrol related to use the revenues to subsidize the road fees for vehicles that have catalytic converters,
- Energy taxation based on the European CO<sub>2</sub> tax approach,
- Support to voluntary programs, which are related to protection of environment like environmental training, education, feasibility studies, research, or to start projects.

**CROATIA**

## **CROATIA**

### **3. PARTICULAR NEEDS ON THE SUBJECT OF ENVIRONMENTAL INSPECTORATES**

Program of water management inspectorates improvement have to include following items:

- changing within the government administration bodies that the county inspectors become governmental officials within the State Water Directorate,
- fulfillment of the planned inspectors position on the County level (employment of the inspector in the Counties),
- intensifying cooperation with the other inspectorates, in particular with the Environmental Inspectorates,
- training, education of the water management inspectors,
- improvement of the working conditions (laptops, sampling equipment, etc),
- improving of the Court work (faster dealing)
- etc.

**CYPRUS**

## 8. NEEDS – REQUIREMENTS FOR IMPROVING EXISTING REGULATORY SYSTEM

Environmental legislation and existing regulatory functions in Cyprus, provide for a satisfactory protection of surface and ground waters from industrial and other human activities

A number of inadequacies and drawbacks are identified, where specific actions should be taken for further improvement of the Environmental Regulatory System.

### a. Permitting System

Permitting system provides for a separate permit for industrial liquid and solid waste, air emissions and operation. As high level of integration in the permitting system is very important the need for 'Environmental permit' to cover all emissions should be considered.

Permit renewal is another issue which requires more attention. Existing mechanisms for changing a permit is similar to that for issuing a new one. The renewal process can simplify by issuing complementary permits to the original permit dealing only with modifications.

### b. Compliance and enforcement

Compliance and enforcement is the weak link in the regulatory cycle. Most of the agencies involved in the enforcement of Law are large Departments with a variety of others traditional functions. The staff number, which is directly involved on a full – time basis in environmental management issues is limited.

In this respect there is a need to enhance the capacity to implement and enforce the environment law with the staffing of public agencies involved in environmental compliance and enforcement.

Regulatory monitoring of emission for air, water, noise and environment impacts, is carried out; however the main focus of monitoring is wastewater effluents, and in this case the need for more frequent monitoring is obvious. There is little or no regulatory monitoring of waste. Environmental impact monitoring should also be further elaborated.

There is no self-monitoring by the operators according to existing legislation. Self-monitoring should be conducted by operators. In this respect the option for purchasing services by operators for inspection and then reporting to the competent agencies should be considered.

In the case of law violations two drawbacks are identified.

The first one is that in the case of prosecution the only analyses which are accepted as evidence by the Court are those conducted by the State General Laboratory. The need that analyses by other laboratories are accepted by Court could be considered. In this case the accreditation of these Laboratories is necessary.

The second one is that the case cannot be compounded but must go to the Court.

The power of Chief Inspector for compounding the case and putting a fine should be considered.

**ISRAEL**



## ISRAEL

### Possible Obstacles, limitations and further needs

- As far as the size of the inspection manpower capabilities is concerned, here lies a real and present obstacle of inspectorate capabilities, or better defined – the lack of them.

For reasons specified above, such as national priorities of all sorts, the MoE's annual budget is greatly limited and therefore regulated accordingly throughout the various projects, long & short term, set out by the ministry. To get an idea of the magnitude of this restricting situation I may say that for the fiscal year of 2000 the MoE's budget was around 50 Million USD. Unfortunately, we are still not in a position to receive the true inspectorate needs to achieve our set goals in the time period set by the different permits throughout Israel's industry. Therefore we must conduct more carefully and thoughtfully our enforcement actions in order to create broader compliance rates within our constituencies.

- Some hardware could make the life of the inspector a lot easier when trying to carry out his/her work properly. Since this is the information age there are several gadgets that may turn out to be useful, efficient and effective in conducting field inspections and enforcement actions.

For example: Digital cameras that allow to take high resolution pictures of violations and transmit them later on via computer or Internet to either fellow investigators, professional experts, other government institutions or NGOs and the public.

Personal portable computers are quite handy for the inspector, especially when equipped with wireless connections. GPS instruments should be standard issue for the inspectorate personnel.

And last and surely most important, every field officer should carry a portable - state of the art - laboratory. These elements are crucial to collect the accurate information and evidence, needed in the court of law for prosecutions of possible violators.

### Application of “problem solving” strategy

#### A practical way in managing compliance and enforcement actions

The Problem solving strategy was defined and described by Prof. Malcolm Sparrow from JFK School of government, Harvard University.

The method realizes that regulatory and enforcement agencies all over the world tackles the same difficulties:

- lack of connection between field level operatives and senior management in defining the mission and managing discretion and across the disciplines to be enforced
- “Good people locked in a bad system” syndrome.
- Incompetence in dealing with problems that extends the usual, routine frame of enforcement and inspection.
- Performance measurement - The “bean counting” effect of counting output and actions instead of outcome and results.
- The inability to act proactively rather than reactively on the core problems.

There are many more characteristics to the continuing mutual difficulties in the everyday life of an enforcement and regulatory agency, which is true for all agencies from Customs and Police to Environment agency and Safety at work agency.

- Enforcement actions strict and straightforward or negotiated rulemaking and client service. Which better serves the goal?

According to Prof. Sparrow, the method principle is simple:  
Find Important Problems and Fix them.

We have to have a strict method of selecting the really important problems but once we find them, we will keep the solution team result-oriented, focused on environmental measurement of success (or failure) and free to tailor their own form of solution to the carefully described problem.

For example, district managers are key players in addressing the problem of LBS of pollution to sea. In order for them to apply strategic and operational analysis they have to act, in some form, in the following procedure: Identify the major problems within their areas in terms of environmental and health risks, set priorities based on all data gathered, set performance measures to account for hopeful progress, form problem-oriented task forces, make sure the team has established an insight with a view to action, set follow up schedule and meetings.

Districts will be responsible and held accountable for exercising discretion with enforcement actions, and for developing their own specific measures of identifying compliance rates, which are diverse and multi-disciplinary and highly complex. Doing that, they will most probably have to collaborate with other Ministry units but also municipalities, other governmental organizations and the public.

Task force in a District will make extensive use of existing GIS and MAOF software to explore patterns of risk concentrations (industrial, geographical), possible sources for cooperation within near agencies, and possible political and public implications.

The concept of "Intelligence-Led Policing" applied to the inspection units of MCED and other inspection and supervising units, could create an accurate, real-time database material for operation and risk control decision making.

This is emphasized because many environmental violations are in fact involving risk-conscience, economic driven opponents.

This method is implemented in the Department of Environment of the state of Florida for few years now. They have begun with a small pilot project of reoccurring sewage-water spills in Orange County. The success story of this pilot project has been regenerated to become the DOE's main working program to improve and solve environmental problems.

The intention is to implement similar system in the Israeli Ministry of the Environment.

**LEBANON**

# LEBANON

## 6 - Les axes de travail au sein du Ministère:

**A- Mettre à jour les décrets de classification des activités.**

**B- Identifier un plan d'action pour minimiser le temps nécessaire pour la délivrance de permis des activités classifiées.**

**C- Développer des lignes directrices environnementales pour les activités suivantes:**

- 1- Industrie du tannage,
- 2- Industrie agro - alimentaire,
- 3- La construction dans les zones sensibles,
- 4- Les Hôtels "Verts",
- 5- Les stations d'essence,
- 6- Les fermes,
- 7- L'industrie de plastique,
- 8- L'industrie de caoutchouc,
- 9- L'industrie électrochimique,
- 10- L'industrie de verre,
- 11- L'industrie de papier,
- 12- L'industrie de teinture et du textile,
- 13- Les zones industrielles.

**D- Développer des décisions ministérielles sur les lignes suivantes:**

- 1- Les lignes directrices environnementales demandées pour la délivrance de licences de permis pour les établissements de tannage,
- 2- Les lignes directrices environnementales demandées pour la délivrance de licences de permis pour la construction dans les zones sensibles,
- 3- Les lignes directrices environnementales demandées pour la délivrance de licences de permis pour les établissements agro-alimentaires,
- 4- Les lignes directrices environnementales demandées pour la délivrance de licences de permis pour les stations d'essence,
- 5- Les lignes directrices environnementales demandées pour la délivrance de licences de permis pour les établissements de récupération du plomb des accumulateurs usés.

**E- Mettre à jour des normes de qualité environnementale:**

- 1- Développer la version finale des normes nationales pour la qualité environnementale avec la collaboration des experts allemands.
- 2- Traduire les normes développées en une décision ministérielle.

**F- Développer un Manuel d'audit environnemental:**

- 1- On a développé la version finale, en anglais et en arabe, du Manuel d'audit environnemental après vérification dans deux établissements et consultation avec les experts libanais,
- 2- Distribution du Manuel à toutes les parties intéressées dans les secteurs privé et publique
- 3- Organisation d'ateliers techniques intitulés: " le Manuel est un instrument de conformité".

#### **G- Renforcer la capacité des employés du Ministère sur la conduite de surveillance environnementale:**

- 1- Développer une stratégie de surveillance pour les nouveaux établissements et ceux existants
- 2- Développer un programme informatisé qui répond au besoin du Ministère dans le domaine de la surveillance continue.

#### **H- Elargir la connaissance publique concernant la conformité industrielle:**

- 1- Organiser un comité de référence formé de représentants de différents ministères et organisations du secteur public concerné,
- 2- Créer un Web Site sur Internet,
- 3- Organiser d'ateliers techniques sur la réalisation de procédure nationale d'audit en respectant le système ISO 14000.
- 4- Organiser un atelier explicatif sur les différences entre l'audit détaillé et l'audit de conformité, l'audit étant un pas obligatoire pour identifier les mesures de prévention et les options de production plus propre.

#### **7- Les besoins particuliers en sujet d'inspectorat environnemental :**

- 1- Il est indispensable d'établir une division spécifique au sein du Ministère de l'Environnement concernée de l'inspection environnementale.
- 2- La provision de toute technologie nécessaire pour la réalisation efficace de l'inspection: instruments de mesure et de surveillance, programme informatique, etc....
- 3- Organiser d'ateliers de formation aux personnes chargées de l'inspection sur les méthodes d'utilisation de différentes techniques.
- 4- La nécessité de mettre au point une description de tâche pour les personnes chargées de l'inspection au sein des établissements responsables: Ministère de l'Environnement, Ministère de Santé Publique, municipalités etc....

**LIBYA**

Recommendations :-

Department of inspection and environmental control is currently in the phase of formation and it needs the preparation of qualified technical cadres in carrying out the execution of control and inspection tasks according to a scientific and practical style to enable it to implement the environmental laws to restrict the pollution and that will be through the following means :-

- Organizing training courses in the field of inspection operations and provision of licenses , penalties and environmental accounting review and auditing .
- Training of cadres in operation and management of utilities of waste water treatment .
- Training of local cadres in operations of evaluating the wastes on shores .
- Training courses in the field of evaluating the environmental impact for projects .
- Training courses in maritime legislation .
- Co-Operation with Barcelona Center “ clean production “ .
- Contribution of international and regional organization to assist Great Jamahiriya to make available the updated and sophisticated instrumentation to increase the efficiency of local laboratories .
- Participation in Mediterranean plans for the exchange of technological information and data plus building the technical capabilities and experiments of other countries in the field of environmental monitoring .
- Importance to make Great Jamahiriya a partner in the program of the strategic work to confront pollution against respective land activities .

**References:**

- Annual reports for T.C.E.P.
- Encyclopedia of marine legislation.
- Law No. 7 and Executive regulation.
- Law No. 13 for public cleaning.
- Tourism master plan.

**MALTA**



## NEEDS OF COUNTRY ON THE SUBJECT OF ENVIRONMENTAL INSPECTORATE THAT SHOULD BE FURTHER DEVELOPED, STRENGTHENED AND ESTABLISHED

Currently, there are some departments and/or institutions who are equipped with their inspectorate. The Environment Protection Department has a complement of environment inspectors who are responsible, among other things, for the carrying out of inspections of an environmental nature. These are mainly related to the analysis of complaints launched regarding some breach of environmental law and legislation, and also to the conduction of inspections in relation to the applications for a Trading Operational Permit.

Currently, the Environment Inspectorate is being re-examined, as regards institutional and legislative upgrading. The complement of inspectors is expected to increase in the coming months. Moreover, the Environment Protection Act 1991 is being amended to include various other aspects which need attention. This will include the vesting of Environment Inspectors with enforcing powers when a breach in environmental law is encountered.

The Drainage Department also has its own inspectorate for the inspection of issues dealing with the sewerage network, especially coming from industrial facilities. However, the Unit dealing with these issues needs institutional and legislative upgrading. In fact, the LN 8 of 1993 dealing with regulations to control the discharge of liquid waste into the sewerage network, from industrial establishments, will be revised in the near future to be more in line with the obligations of the LBS Protocol and also in line with the obligations of EU Directive 76/464/EEC and the relative Daughter Directives.

Since the sewage outfalls contribute to about 90% of pollution to the marine environment, there is a great need to see that the treatment plants to be built and finalised by 2005 function properly and that the waste water going into the sea is according to standards. Before this, the Drainage Department Inspectors will make sure, through appropriate monitoring and regular inspections, that industrial effluent entering the sewerage system is also according to the standards outlined in LN 8/93 so that the treatment plants work properly.

Other inspectorate bodies which deal, more indirectly, with environmental issues, are those dealing with the Department of Public Health and the Planning Authority. The inspectorate of the Department of Public Health deals with inspections which relate to breaches in legislation relating to public health issues. They also conduct sampling for bathing water quality during the bathing season (May to October).

The Planning Authority inspectorate deals mainly indirectly with environmental issues. They are involved in development inspections and also in inspections of certain zones dealing with scheduling of areas for protection purpose, as the establishment of protected areas of ecological importance and of scientific importance.

Hence, the needs of our country deal mainly with:

- hands-on training for the inspectors on the various issues, especially how to deal with certain situations. Such training may be in the form of workshops and on-site training to be repeated periodically in order to keep the inspectors up to date on relevant issues.
- a set of guidelines and/or codes of practice which would help the officials in the proper carrying out of their duties. Such guidelines and/or codes of practice will be the same for all Mediterranean countries and this would help in better integration of resources and more comparability in the results obtained
- a proper legislative set-up which would give the right enforcing power to the inspectors to act according to the need of the particular situation encountered
- a proper institutional set-up needs to be established where the inspectors will have their own well-defined list of duties

**MOROCCO**

# MOROCCO

## PERSPECTIVES

- Instituer, harmoniser, renforcer les capacités et du Réseau National de Surveillance de la Pollution d'origine terrestre transférée vers la Mer (MED POL);
- **Identifier les zones industrielles et mettre en place un SIG sur les points chauds et zones sensibles côtières marocaines ;**
- **Développer et adapter les techniques d'épuration et de réutilisation des eaux usées;**
- **Elaborer et harmoniser la législation adaptée à la préservation de l'environnement marin contre toute forme de pollution ;**
- **Elaborer des lignes directrices techniques (Manuels techniques ou procédures claires) pour l'application des mesures adoptées et fournir une assistance pour l'application effective de ces mesures d'inspection et de contrôle;**
- Identifier les problèmes déjà rencontrés par les Parties contractantes dans l'application des mesures adoptées et formuler des propositions pouvant aider à les surmonter.
- Formuler et mettre en oeuvre des programmes ou des plans d'actions nationaux fondés sur l'approche de précaution afin de contrôler la conformité de respect des normes environnementales des activités domestiques et industrielles, en vue de prévenir et d'éliminer la pollution due à des activités menées a terre. Ces programmes ou plans devraient comporter, selon qu'il conviendra :
  - La mise en place ou le renforcement d'une administration publique spécialisée dans la surveillance et de contrôle de la conformité, la prévention et la lutte contre la pollution et l'affectation à celle-ci de fonds suffisants pour son financement;
  - L'élaboration d'instruments juridiques nationaux adéquats et la formulation et l'adoption de mesures de prévention et d'élimination de la pollution (contrôle, durcissement des sanctions pour le respect de la réglementation en vigueur);
  - L'utilisation d'instruments économiques appropriés s'inspirant des principes du "pollueur-payeur" et de l'approche de précaution;
  - L'encouragement d'accords volontaires (contrats pour la réduction et l'élimination de la pollution, lorsqu'il y aura lieu) ;
  - L'établissement d'un échéancier pour l'application intégrale des mesures communes antipollution adoptées par les Parties contractantes à la convention de Barcelone;
- Mettre en place les dispositifs réglementaires pour l'institution d'un Corps d'Inspection et de contrôle environnemental au sein du département de l'environnement qui coordonnera ses activités avec tous les corps d'inspections et de contrôle des autres secteurs, notamment : la police de l'eau, les polices judiciaires, Brigades de l'environnement de la Gendarmerie Royale, Agents de contrôle fiscaux , SINMA... Cette institution sera chargée des inspections et de contrôle de la conformité environnementale dans les installations consommatrices d'eau, polluantes ou génératrices d'énergie, ou tout autres installations similaires.... Ladite institution doit être dotée à cet effet d'un pouvoir administratif y afférent pour l'exécution de ses fonctions suivant les normes requises ;
- **L'élaboration et la mise en oeuvre de programmes nationaux de contrôle du respect des engagements adoptés aux échelles nationale et régionale;**
- **Mise en place d'installations de réception portuaires pour la collecte des déchets liquides ou solides générés par les navires (résidus huileux et chimiques, eaux usées et détritux) ;**
- **Renforcement de la base de données relatives à la pollution marine, par la mise en place des équipements aidant à la surveillance et le contrôle de la conformité ;**

- **Elaborer des méthodes d'audits adaptées aux contextes locaux sans toutefois léser la promotion développement socio-économique du pays.**
- **Elaborer des programmes de formation approfondie au profit des cadres et techniciens du Département de l'Environnement, en matière d'inspection et de contrôle et d'analyses environnementales et de gestion des ressources ;**
- **Intégrer des programmes qui visent à promouvoir le rendement énergétique, des technologies propres, la réduction et le recyclage des déchets... dans les politiques économiques et sectorielles nationales ;**
- **Mettre en place un réseau d'échange d'information entre le département de l'environnement et les autres organismes chargés du contrôle (police de la chasse ; police de l'eau etc....) ;**
- **Dresser un état sur les différentes atteintes à l'environnement et les mesures prises à l'encontre des contrevenants ;**
- **Elaborer un manuel des actions de contrôle possibles ainsi que les modes et procédures d'intervention**
- *Accorder un appui logistique au Service d'Inspection et de Contrôle (SIC) du DE pour l'organisation durant le semestre 2001, d'une session de formation en matière d'inspections et de contrôle dans le domaine de l'environnement et l'échange d'expériences et d'informations pour promouvoir la surveillance de la conformité et l'application effective de la réglementation environnementale.*

**SLOVENIA**

## SLOVENIA

### 7. PARTICULAR NEEDS AND ACTIONS

1. Establish an informal national network (National AC IMPEL NETWORK) which will cover also the needs of MAP programmes
2. Promote the introduction of Best available technologies (BAT) and Clean Technologies
3. Receive assistance in order to strengthen and further develop of national inspection structures
4. Develop and establish of an environmental Integrated Permit System for Pollution Prevention and Control
5. Exchange experience, provide training and guidance for inspectors to develop the interdisciplinary skills essential to enforcement

**SPAIN**

## SPAIN

### Conclusions and needs for environmental inspection

While the distribution of environmental competencies in Spain gives to the Central State competencies in basic legislation and incorporation of European directives, the Autonomous Regions are responsible for monitoring, inspection and enforcement of the environmental legislation. The decentralisation in environmental competencies allowed a more effective implementation of legislation according to regional peculiarities, but the different levels of development between the Autonomous Communities could imply different levels of control and inspection, which should also be taken into account.

As consequence of the multisectorial nature of the environmental issue and the three levels of the Administration involved there is a great number of provisions referring to inspection and control of environmental authorisations. The Communities with a most developed legislation make periodic, complete and exigent inspections with specific corps of inspectors and procedures of control, but some plants in small regions blame the administration a lack of methodology and criteria in environmental inspections.

Monitoring, inspection and control on water, air and wastes is facilitated by the technical precision of the sectorial provisions on the matter. Nevertheless it would be needed to consider an integrated approach in authorisations and environmental control -IPPC Directive- besides to improve the coordination between the responsible bodies -Hydraulic Confederations, National, Regional and Local Authorities. The complexity of the environmental legislation make also necessary implicate industries in self-monitoring and also collaboration with private enterprises in the inspectorate activity. In the framework of the Mediterranean basin, working on guidelines and common principles for inspection could be interesting for the countries in order to facilitate the implementation of the Convention and its protocols.



**SYRIA**

## **Conclusion**

After reviewing of guidelines for environmental inspection, we can refer to the most essential contents from our viewpoint as follows:

- 1 - Inspection strategy (How inspections should be made).*
- 2 - Types of environmental inspections (regular – extra ordinary).*
- 3 - Responsible bodies (national level, local authority).*
- 4 - Plans for environmental inspections (what plans should be made).*
- 5 - Enforcement management system (from compliance information into enforcement actions).*

Finally, we could summarize and prioritize our requirements as follows:

- 1- Developing of environmental legislation considering that establishing of environmental inspection system is the most important subject.
- 2- Capacity building and raising the scientific qualifications of inspectors.*
- 3- Improving the environmental laboratories which serving the inspection procedures, and supply it with required materials and equipment.*

Constantly, we are seeking to cooperate with MAP and looking for its support to protect our marine environment.