Le Agenzie ambientali dell'area euro-mediterranea

John Seager
Head of Monitoring and Assessment, EA Regno Unito

ENVIRONMENT AGENCY

**Session II
Environment Agencies
Tasks and Experiences**

Dr John Seager
The Environment Agency
of England and Wales

**The Environment Agency
of England and Wales**

The Environment Agency is one of the UK's largest non-departmental public bodies with around 10,500 staff and an annual budget of £750 million

ENVIRONMENT AGENCY

Principal Aims

Our principal aim is to contribute to the global goal of achieving sustainable development. Our work is central to the UK Government's Sustainable Development Strategy which is aimed at improving the quality of life for present and future generations.
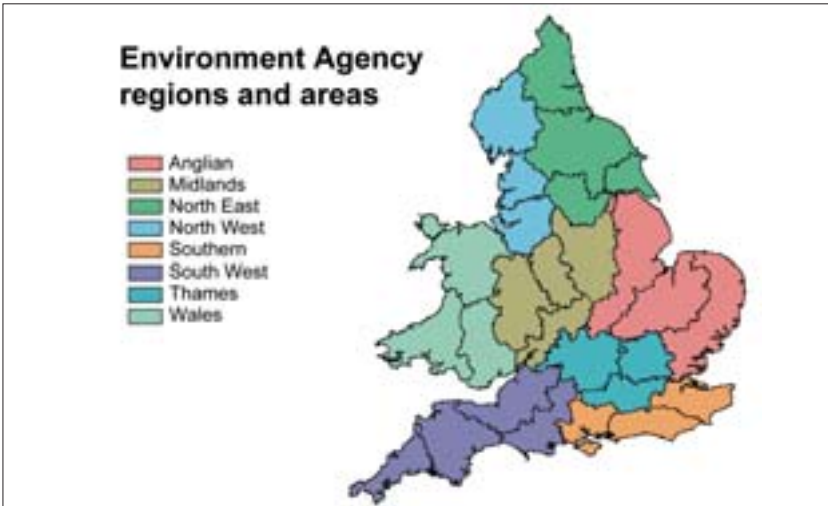
ENVIRONMENT AGENCY

Our Vision

A healthy, rich and diverse environment in England and Wales, for present and future generations.

Vision Themes

- Cleaner air for everyone.
- Improved and protected inland and coastal waters.
- Restored, protected land with healthier soils.
- A greener business world.
- Wiser, sustainable use of natural resources.
- Reducing flood risk.
- Limiting and adapting to climate change.
- An enhanced environment for wildlife.
- A better quality of life.

ENVIRONMENT AGENCY

Principal Activities

- Air Quality.
- Conservation.
- Fisheries.
- Flood Defence.
- Land Quality.
- Navigation.
- Recreation.
- Waste.
- Water Quality.
- Water Resources.

ENVIRONMENT AGENCY

International Work

- European Commission.

- European Environment Agency.

- Partnerships with Member States

- Capacity-building in developing countries.

Items of EU environmental law adopted per year
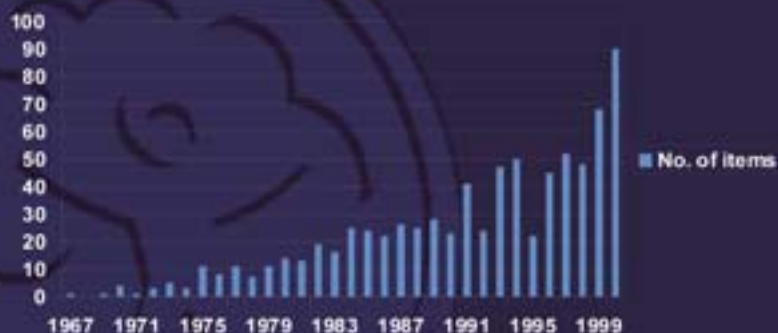
No. of items

Philippe Crouzet, (France)
Institut français de l'environnement (Ifen)
Head of mission "International and Methods"

From data collection to reporting.
The functionning of the French environmental
information system within the EIONET network

Introduction

Ifen was created in 1991 to meet two targets, that were defined to provide *the ad hoc* environmental information required by the French government on the one hand, and to become the National Focal Point (NFP) of the recently decided European Information and Observation NETwork (EIONET), (Règlement 1210/90, 1990; Règlement 933/1999, 1999), of which the European Environment Agency constitute the European node.

Hence, since its definition phase, Ifen was designed within an European context to fulfil European requirements. In parallel, Ifen was designated as the Statistical office of the Ministry of the Environment. This function makes it possible to obtain the statistical information produced by the other statistical offices, all being supervised by the French national statistical institute, Insee. Hence being member of the National council of statistics (NCS), Ifen can suggest surveys required by its needs. The labelling by the NCS is a prerequisite to make the response compulsory. More over, Ifen is, by delegation of Insee (the French national statisticalody) for environmental issues.

An important function, that requires the largest deal of resources, is the production and dissemination of the *"scientific and statistic information"* on the environment and issue regularly the French State of the environment (SoE) report. The last release of this report was delivered in early 2002, after two previous publications in 1994 and 1998.

This paper summarises, using the water case, to which extend EIONET and domestic functions intertwine. The mutual benefits of NFP and other functions are emphasised inasmuch they contribute to improving the production of useful environmental information. To address this issue, the meeting of the three main functions of data collection are considered: relevance of the information with respect to the concern, representativity of the information and comprehensiveness, with respect to the domain to cover.

First example: The Dobris data provision

Ifen started to operate in the second half of 1992, just after the Rio's word summit, in a very difficult context of pre-pooling campaign that was not that favoura-

ble for a newly installed organisation. Being a new institution it had to face both to the demand of publishing to prove its usefulness and to combat the reluctance of data providers to deliver data needed to prepare the French SoE and to respond to international requests.

In the mean time, the task force preparing EEA was starting collection of data needed to prepare the first pan-European report, better known as the "Dobris assessment". Both organisations had to face the same kind of difficulties, and both lacked experience, data information systems and ad hoc methods to make useful information.

These lacks are exemplified considering data requests, supposedly used to make information that should build knowledge, after assessment. Regarding river water quality issues, the data requests was to provide "yearly averages of concentrations at relevant monitoring points in rivers". The minimum set of points to deliver was those aimed at in the Exchange of information decision.

In response, Ifen collected all available data from the national monitoring networks who agreed to deliver data, selected a set of points "by expert saying" and computed annual means as the sum of values divided by the number of observations. The very short time allocated to deliver data, the absence of stabilised data collection procedures, the lack of scientifically defined method of averaging, the imprecise definition of needs (averages, for what assessment?), etc., yielded a poorly suited and representative data set.

Obviously, each country reported according to its own understanding and will to co-operate. Despite these adverse conditions, several maps of concentration classes were issues, some statistics computed confirming water contamination and showing regional differences in this contamination.

Comparing the information published to the three criteria, it comes that the outputs were not fully relevant, not representative and lacked comprehensiveness. The purpose of this assessment is not to criticise the "Dobris assessment", but to put a reference situation to which further progress shall be related in the next sections.

First of all, relevance criterion could not be met because the indicator chosen (annual average) cannot fully capture an impact on water quality. By contrast it is very relevant in assessing a state and the trend in the state, and therefore an impact of a pressure. Second, the representativity of the set of points was undoubtedly very poor. No protocol for point selection was available. Hence, many produced statistics (e.g., percentage of points falling in certain ranges of concentration) are questionable. Last, comprehensiveness, in this case to be understood as full coverage of environmental items under concern was not fulfilled as well.

Again, this apparent negative judgement does not apply to the remarkable success that the issue of the Dobris assessment constitute. Indeed, the "best available data" was "put to work". The reasonably obtainable information was actually withdrawn from irrelevant sets of data and prototype procedures, prior to EIONET actual running. A proof of this lies in the of consideration sof the recent Water framework Directive that stands on EEA's findings to justify a new piece of legislation.

Second step: towards representativity through EuroWaternet

Being aware of the poor scientific background of the work that could be carried out applying the existing methodologies and data collection procedures, the just in-

stalled European Topic Centre on Inland Waters (ETC/IW) addressed first the is-sue of representativity of the observation networks. To that end, the method that was developed (Nixon, 1997)) processes the set of sampling points as a stock of potential information from which representative subsets are selected, according to stratification criteria.

On the French side, Ifen had started a parallel attempt to address representati-vity of, among other, water quality. The first regular publication of Ifen (Crouzet, 1994) presented results using a tentative approach. Hence, a success story of mutual enrichment had the opportunity to happen, since preoccupations were identical.

The stratification criteria suggested by ETC/IW are the size of the catchment and the pressures that are likely to impact water composition. The French position is that catchment size is a spurious criterion, leading to tautological results and that only pressures can reasonably produce sets of sampling stations which observed data are likely to constitute true statistical populations of concentrations. The rea-sons for these outcomes were drafted in an EEA report (EEA, 2001) and are cur-rently being reported and exemplified in a report to be released in the next months. The statistical backgrounds are beyond the scope of this presentation. It is more interesting to focus on the important advances resulting from ETC/IW work. This work happened to be the most efficient sting to improve data collection, processing and information delivery of the past decades in France.

As focal point, Ifen launched studies to implement fully the newly designed con-cepts of the EuroWaternet selection of monitoring points, with the aim to deliver relevant information to EEA. These studies, which the pilot phase was carried out in 1998 (Leonard et Crouzet, 1999) and completed in 2000 (Beture-Cerec et ARMI-NES, 2000; Beture-Cerec et ARMINES, 2001) yielded very important, sometimes unexpected outcomes, that have had direct impact on the NFP functioning.

From NFP duties, EuroWaternet implementation requires to answer the following questions:

1. Can the stratification procedure be carried out?
2. Do we have at our disposal enough good monitoring stations to select the re-quired number resulting of the stratification procedure?
3. Is the data flow (monitoring, collecting, transmitting observation values) ope-rational and capable of providing data that can be averaged and delivered in ti-me?
4. Are calculation procedures and tools available?

The studies and implementation follow-up yielded puzzling answers, that fuelled systematic identifications of gaps and improvement of the current practices that were "considered as good", until these new requirement.

First, the stratification procedure demonstrated that the weak point was not the potential pressures, but the irregular resolution of the catchment geographical la-yer. The currently used (and legally enforced) layer is in France the BD Carthage (RNDE, 1997), that is a nation-wide, but basin district made catchment layer. The average size of catchment widely vary between districts, from 15 to 200 km^2, full range being 2 to 1200 km^2. This extreme range does not constitute a coherent system defining "elementary catchments". However, the procedure showed very positive input and clarification of results, that led to substantial improvement of domestic reporting and that were used in further EEA publication, for example (Crouzet, Leonard *et coll.*, 1999).

Second, the required number of monitoring stations (552) was obtained from the

existing set of sampling stations, many of them had however to be discarded from the selectable set for different reasons. Further tries of selection suggested that a maximum number of 1250 stations among the 3700 currently monitored at the national level could be exploited to output representative results, e.g., for SoE reporting. These figures suggest however a low efficiency of the national network, since many national monitoring stations provide only information valuable at the local scale.

This outcome is not that unexpected considering the history of network implementation. During the past decades (since 1968) network design had been carried out emphasising local surveillance, since it was not considered that general assessments could be derived from river water monitoring. The general belief was (and is still for many experts) that observations of river water just provide information of the place and the time of sampling. Moreover, the sampling strategy was oriented towards quality assessment at the spot. This objective requires observation during the period of worst quality, at the expense of regular monitoring required for statistical calculations.

In the next section, modern concepts of water system surveillance, and positive outcomes from the water Quality Accounts methodology are mentioned, showing that more knowledge can be obtained from the existing networks, including those with irregular sampling strategies.

Third, data flows revealed not well fitted to the new requirements. The main gap results from the time lag between sampling and validated electronic data. Most national data is used for odd reporting purposes, and is just not regularly available in due time for reporting to EEA. The problems related to sampling strategies have been mentioned, and pose problem to exploit data in areas where the density of monitoring points is low. Again, the different practices of the basin districts are a source of discrepancies.

However, the sampling strategy oriented towards quality assessment (carried out by comparing values to lists of thresholds concentrations) showed unexpected impact on data quality assessment. This procedure is not very demanding since the worst value is discarded, hence making extreme value seldom defining the quality class. By contrast, wrong extreme values have dramatic impact of annual averages, an also on flux calculation. Flux calculations, that is required by the Marine Conventions represent another powerful incentive to improve data processing, and is just mentioned as a side benefit on the international work that Ifen carries out.

The need to provide accurate annual means within EIONET made it necessary to design and implement a new quality assurance procedure for data reception at Ifen. This procedure leads to discard and correct data that had been collected for scores, and never fully checked, just because there was no need to fully check it!

Lastly, the implementation study raised the apparently naive question "what is an average?". This issue was addressed using sophisticated geo-statistical techniques to demonstrate how stratum averages and confidence intervals of the means should be calculated. An stratum being a collection of points, a proxy technique of computing stratum averages and confidence intervals was developed using only point averages and variances at the point. Again, the "common sense" way of calculating mean and variance was demonstrated to be totally inaccurate and leading to requesting excess sampling points and sampling frequencies.

The correct methods that were developed have been implemented (not yet fully, due to insufficient resources) and shared with the Mediterranean countries, under

the auspices of the MedStat programme.

This second stage gave munch better meeting of the representativity (applying EEA requirements regarding stratification) and obliged to enhance relevance (implementing sound calculation methods on better checked data). However, comprehensiveness criterion was not fully addressed at this stage

Step 3: investing into comprehensiveness

The comprehensiveness is probably the most complex issue to address. This comes, partly, from confusion between representativity and comprehensiveness. The EuroWaternet protocol provides a representative assessment of the impact of pressures on water composition. The stratification procedures sorts out the monitoring points which upstream catchment receives the "same" density of pollution coming from a "single" sector of activities. For example, the set of points upstream which more than 50% of the area is occupied by intense agriculture and where less than 50 inhabitants per km^2 dwell may be considered as "potentially impacted by agriculture". Statistics carried out on data from these points are representative of the impact of agriculture on river water composition. For example, it can be stated that in these points, nitrate concentration raises yearly by 1.5 mg NO_3 l^{-1}, with a certain uncertainty.

By contrast, this procedure gives no solid information about the quantity of rivers actually impacted. Indirect information can be driven from the areas of catchment under a certain pressure, but this not truly comprehensiveness.

To meet the third criterion, a possible way is to consider the "quantity" of river (or water body) actually impacted, considering no longer the average concentration, but the quality index. In other words, the current EuroWaternet approach provides the intensity of impact resulting from certain pressures but not the area extension of impacted water bodies. By contrast, meeting the comprehensiveness criterion requires to calculate the quantity of river presenting a certain quality state, as it results of impacts. In a leaflet, EA presented these points of view as respectively "horizontal" and "vertical" approach of river quality issues, to capture the ideas of stratification and river course that are reflected in the calculation methods.

The quantity of river is the variable that provides the representativity, therefore no selection among the set of monitoring station is required. A quantity of river is satisfactorily expressed as a proxy of the potential energy content, and calculated by multiplying the length of any reach by a characteristic discharge value (Heldal et Østdahl, 1984). The complete methodology of this approach is the basis of the water Quality Accounts (WQA) that was engineered by Ifen on behalf of Eurostat (Crouzet, Germain *et coll.*, 1999; European Environment Agency, 2001)).

Application of the WQA is currently being extended from prototypes carried out in UK, Ireland, Slovenia and, of course, France on existing water quality maps to systematic calculation of the different accounts and indexes that constitute the outcomes of the method.

Again, an European development, supported by Eurostat takes stock of the improvements to data monitoring implement in response to EEA requirements and provide comprehensive, representative and relevant information which was used to report in national SoE (Institut Français de l'Environnement (Ifen), 2002).

Both initiatives, EuroWaternet (as described above) and WQA represent very positive inputs to the screening phase, the first stage of assessment and possibly next phases of the implementation of the WFD, as it was stated during the drafting of the European Guidelines of the IMPRESS (IMPact and PRESSures) working group. This is a side outcome of an EIONET process that was not intended to that aim.

From use of network to design of network

EIONET is not a stand-alone body. The newly implemented Water Framework Directive ((Directive 2000/60/EC, 2000) put new questions, among which the need for ad hoc monitoring. In France the question was addressed considering the WFD needs in parallel with other monitoring needs. During a preliminary phase, the question to answer was the estimate of the number of monitoring points that would be necessary on the long term to meet WFD requirements and constitute as well some "baseline monitoring", responding to other requirements: EEA, OSPAR, national SoE, etc.

The issue was addressed very simply, taking stock of the outcomes of both EuroWaternet and WQA implementation. As NFP and Eurostat focal point, Ifen was the relevant organisation to suggest a simple method. The assessment was carried out considering the stratification procedure on the one hand (representativity of pressures) and the number of main stretches on the other hand (taking into account the backbone of water bodies definition and the WQA stretches). The publication will be available in a few months, but the principles were presented at the ETC/W workshop held in Athens, April 2002.

Once a clear and significant relationship had been demonstrated between stratum and determinand concentration statistics, it became lawful to maximise the design of the network, expressed as the number of needed monitoring point per stratum, as a function of a total number of points. This approach yields an ultimate network comprising an infinite number of stations that compares with a real network made of a finite (and given) number of points. Statistical correlation on the first diagonal gives quickly the optimum number, achieved when increasing the number of real points does not change the correlation coefficient. For example, classical pollutants (N, P, organic matters, etc.) are optimally assessed with a 2500 points network (99.7% of required information), whereas 3500 points just move to 99.8% of the total addressable information. By comparison, the current networks yield about 60% of the addressable information on rivers.

These values could be improved in parallel with the geographical catchments layers. However, sensitivity testing on basin district having designated very small elementary catchments strongly suggests that the order of magnitude is quite correct. This approach does not specify precisely where to place the new points, but allows assessing, by catchment, the number of points to identify, according to elementary catchment characteristics.

When implemented, the newly designed network will contribute to better data provision and improvement of EEA's assessments as well of national SoE

Conclusion and forecasts

The technical conclusion of the short story, focused on a limited topic inside the inland waters concern can be summarised in a few steps.

- European level assessment started using current knowledge, which was sufficient to identify the existence of problems, not to assess them. (Dobris assessment data collection and processing)
- Further identification of needs showed importance of relevance, representativity and comprehensiveness characteristics of the methods to apply. (fist stage of methodological specification by ETC/IW).
- Stepwise developments suggested unsolved problems, not clearly understood until concrete application was tried. (sound way to compute statistical indicators, data quality issues related to new goals, better scoping of ETC method).
- Integration of external needs (Eurostat, OSPAR, WFD) just enrich the overall approach and do not represent extra burden. On the contrary, they offer supplementary possibilities to output useful information and knowledge that share the same data sources.

The institutional aspects of EIONET have not been discussed yet. This is because it is not possible to structure an institutional data flow until the content of data flows and the purposes of data provision have been clarified.

The example of water has shown that the fundamental structure of EIONET (NFP, NRC, ETC, EEA, etc.) can operate only if methods are implemented and data flows already smoothly operating. This was not the case, and an operational structure and method development had to be identified and built before. In the French case, the specific missions of Ifen made it possible to merge NFP and engineering functions. Other solutions are of course possible in other countries. What seems general is that criteria (e.g., representativity) must be clearly identified, checked and criticised, considering also that means (procedures, methods) no match similar means at the local or regional level. On the contrary, reciprocal analysis of needs and criteria yield very positive and mutual benefit.

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Sesta Conferenza nazionale
delle Agenzie ambientali

Palermo 11-13 Novembre 2002

SESSIONE   II

From data collection to reporting.

Philippe CROUZET

Ifen (France)

From best available data to the
best needed knowledge

- The presentation focuses the three main features
of data collection in the aim of reporting:
  - Relevance (correctly addresses the concern)
  - Representativity (unbiased descriptor, representing
    the population, etc.)
  - Comprehensiveness (vs the domain, area, etc.)
- Take examples from the EuroWaternet process

Stage 1: the Dobris process
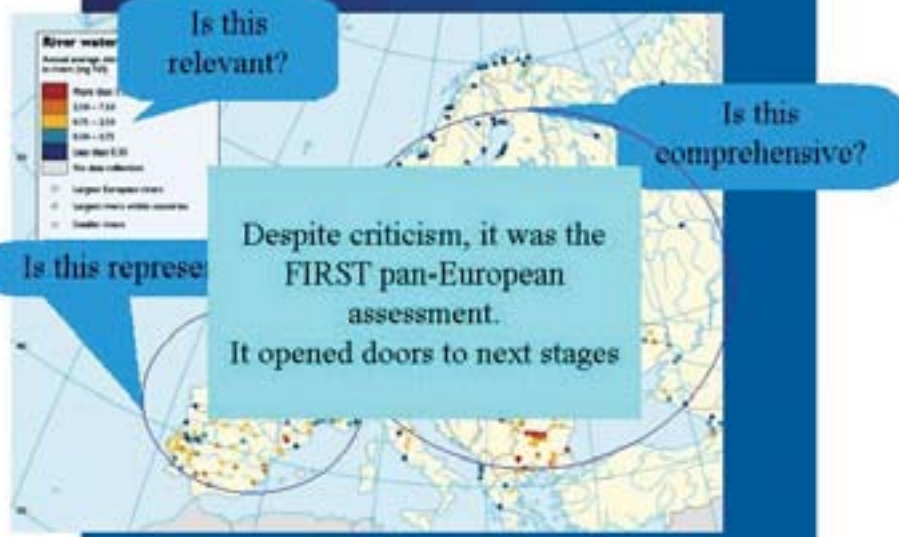
Stage 2: the EuroWaternet process (a)

- Identified the need of relevance
  - Suggested to use the yearly average
  - *Did not specify how to compute it*
- Suggested ways to solve the representativity issue, thanks to statistical stratification
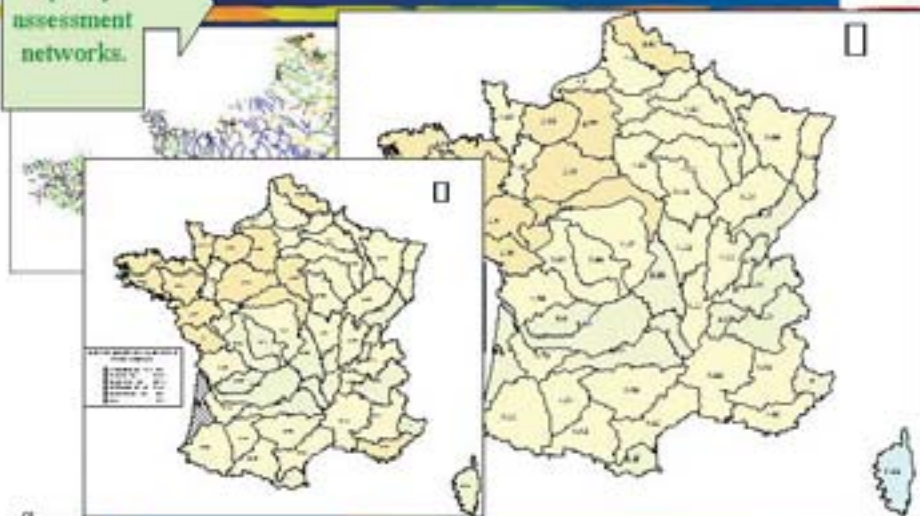 - Proposed concrete ways, that had to be refined

Stage 2: the EuroWaternet process (e)
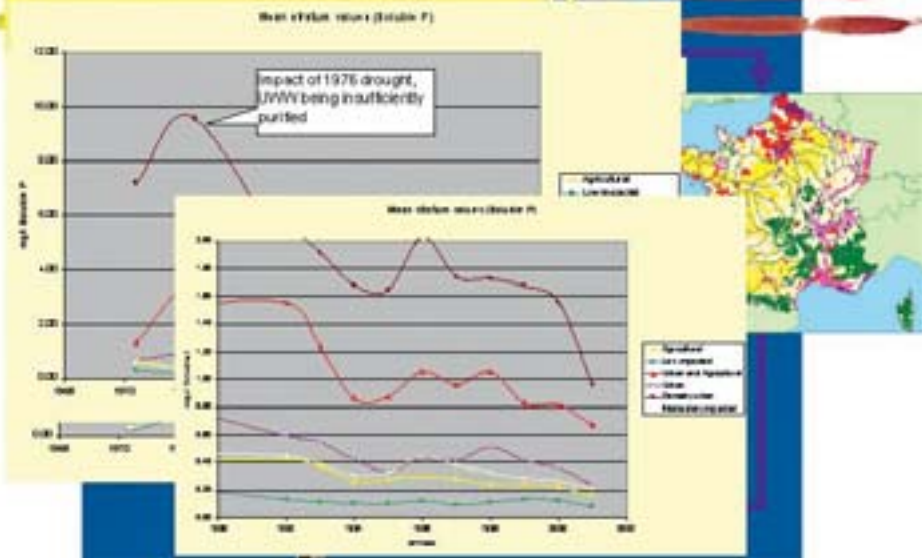
- Is it relevant?
  - Yields sound information about water composition downstream catchment submitted to certain pressure type, provided correct calculation method is used.
- Is it representative?
  - The stratification procedures produces representativity, through unbiased averages per stratum.
- Is it comprehensive?
  - The explored domain is limited

Stage 3: Water accounts (a)

- Uses the water courses as representativity criterion (instead of pollution pressures)
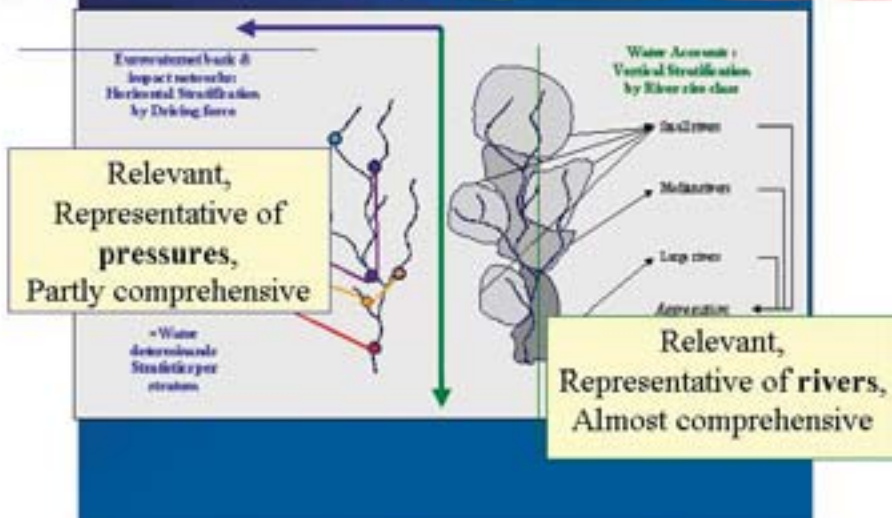- Applies "quantity of river" over quality assessments

Stage 3: Water accounts (b)

From water quality assessment networks.

Source:

Georg Rebernig
Managing Director, UBA Austria

History of the FEA

- 1985: The FEA is founded by the Environmental Control Act, Federal Legal Gazette No. 127/1985.

- 1998: Environmental Control Act, amended version; 1999: the FEA acquires independent status as a limited liability company

- 2000: ownership is represented by the Federal Minister of Agriculture, Forestry, Environment and Water Management

Federal Environment Agency   08/07/03   3

The FEA in numbers (1)

- Annual flat subsidy: 16.2m EUR

- FEA income from project work

Turnover in millions of EUR:

1999	2000	2001	2002
18,4	19,2	22,4	22,3

Staff (of whom university graduates):

1998	1999	2000	2001	2002
231	258	276	275	285
83	109	126	122	132

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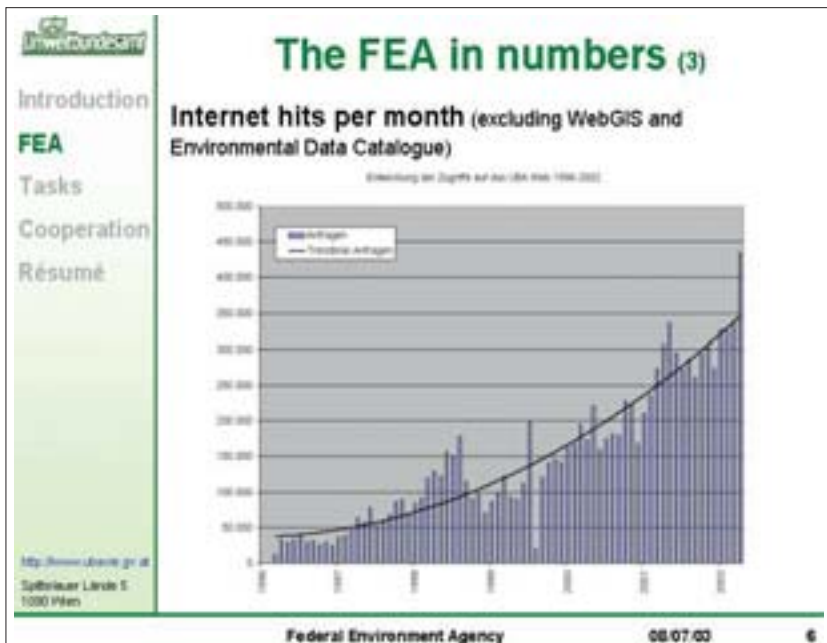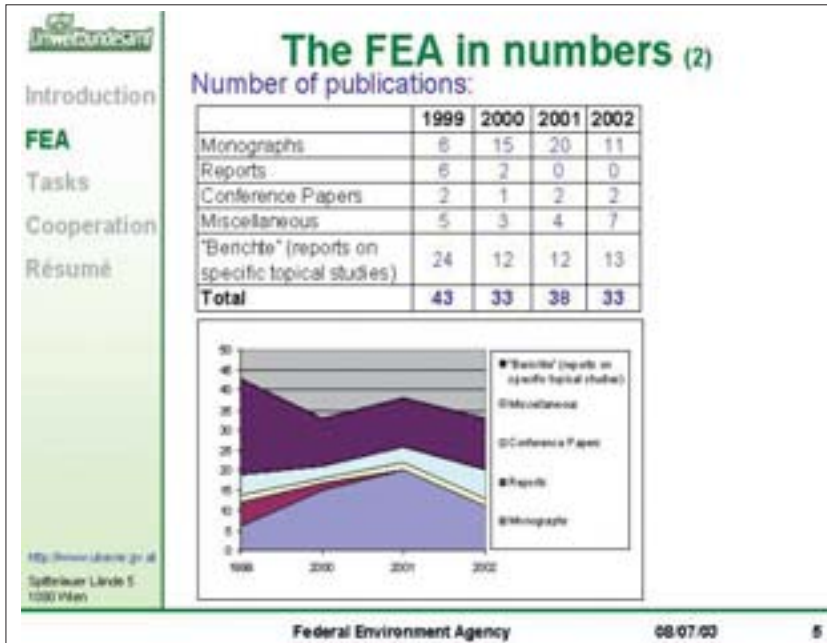
Status of a government-owned limited liability company

- **Identity:** fulfilment of public tasks; additional funds through project work in the public interest

- **Controlling:**
  - Pricing
  - Prohibition of cross-subsidisation
  - Separate accounting system

- **Marketing:**
  - Studies and Consulting
  - Chemical Analyses
  - Data

Federal Environment Agency   08/07/00   7

Presentation of the FEA

The following areas are covered by the FEA:

- Waste Management and Waste Technology
- Contaminated Sites
- Climate Protection
- Transport
- Air
- Water
- Soil, Agriculture
- Forest
- Energy, Nuclear Safety

- Integrated Plant Technologies
- Environmental Audit
- Gene Technology
- Biodiversity
- Nature Conservation and National Parks
- Inorganic and Organic Environmental Analyses
- Chemicals
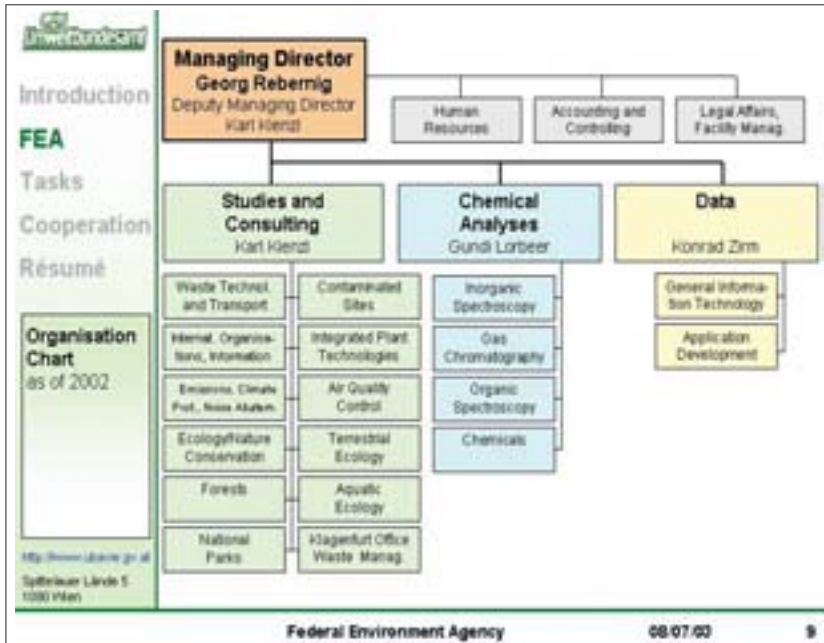
Federal Environment Agency   08/07/00   8

National Tasks of the FEA (2)

Introduction
FEA
Tasks
Cooperation
Résumé

• FEA responsible for the preparation of **Austrian emission inventories** (acc. to Environmental Control Act 1998)

• **Increased activities** in the areas of climate change research and implementation of the Kyoto-Protocol

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National Tasks of the FEA (3)

Introduction
FEA
Tasks
Cooperation
Résumé

Air quality
• Planning, coordination and carrying out of air quality monitoring (background concentrations) in Austria
• Information of the public on air quality
• Keeping of the air quality data network
• Coordination of the Austria-wide quality assurance of air quality monitoring
• Up-to-date Coherent assessment of air quality in order to fulfil national and international reporting obligations

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National Tasks of the FEA (4)

Introduction
FEA
Tasks
Cooperation
Résumé

- **Water quality monitoring** (2000 groundwater monitoring stations, four times a year, approx. 50 parameters; surface waters: 250 monitoring stations, 12 times a year, approx. 50 parameters);
- Keeping the **Austrian water quality monitoring system** (data administration, interpretation and writing of reports)

http://www.ubavie.gv.at
Spittelauer Lände 5
1090 Wien

Federal Environment Agency   08.07.03   13

National Tasks of the FEA (5)

Introduction
FEA
Tasks
Cooperation
Résumé

Waste Management:
- Quantitative and qualitative assessments of **waste streams**
- Compilation of **Federal Waste Management Plan**
- Keeping of the **Waste Data Network** and the Austrian Waste Register and Waste Management Facilities Database
- Fulfilment of national and international reporting obligations; plant inspections to ensure legal compliance

http://www.ubavie.gv.at
Spittelauer Lände 5
1090 Wien

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National Tasks of the FEA (6)

Contaminated Sites:
- Enforcement of the Law for the Clean-up of Contaminated Sites
- Keeping of the Register of Suspected Contaminated Sites and of the Register of Contaminated Sites
- Taking care of investigations; risk assessments; evaluation of remediation success

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National Tasks of the FEA (7)

- **Soil**: the Austrian Soil Information System BORIS holds more than 1.5 Mio. data of site-, profile and measurement information (especially soil quality, pollutants) (http://www.ubavie.gv.at/boris).

- **Agriculture**: studies regarding the environmental impact of agricultural production on the environmental media soil, ground and surface water, air, fauna and flora (biological diversity).

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National Tasks of the FEA (8)

- **IM:** Contribution to **the integrated monitoring of air pollution effects on ecosystems** (UN-ECE-CLRTAP):

  Ecosystem monitoring site Zöbelboden;

  FEA determines the state and change of terrestrial and freshwater ecosystems (critical loads) in a long-term perspective.

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International Tasks (1)

Owing to its central role, the FEA is present in many international forums:

European Environment Agency (EEA):

- National Focal Point (NFP) for the EEA

- Partner in the European Topic Centres (ETCs) for Air and Climate Change, Water, Terrestrial Environment and Waste and Material Flows

- National Reference Centres of the EEA in the areas of Air and Climate Change, Water, Waste and Material Flows, Nature Conservation, Biodiversity, Land Cover, Agriculture, Transport, Energy, Urban Environment, SoE Reporting and Indicators, Noise Abatement, Communication and Policy Instruments

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International Tasks (2)

Introduction
FEA
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Résumé

- Complying with the reporting obligations to the EU Commission, the EEA, EUROSTAT, OECD, ...
- Supporting the EU Commission with the implementation of EU Directives (contracts)
- Clearing House Mechanism and Scientific Advisory Board for the Convention on Biological Diversity
- Clearing House Mechanism and NFP for the Scientific Advisory Board and the implementation of the Biosafety Protocol
- CORINE Landcover data collection
- NFP of the UN-ECE Integrated Monitoring

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International Tasks (3)

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The Environmental Control Act as amended in 1998 authorises the FEA to accept promotion funds and carry out tasks of general interest for third parties:

- Focus: supporting EU candidate countries with the adaptation and/or implementation of their environmental legislation
  - Twinning projects with Bulgaria, the Czech Republic, Hungary, Malta, Lithuania, Slovakia and Slovenia
  - Carrying out EU PHARE projects: e.g. creating environmental legislation for Bosnia-Herzegovina

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International Tasks (4)

- Leadership of and/or participation in international research programmes or projects such as:

  - CLARINET (Contaminated Land Rehabilitation Network for Environmental Technologies)

  - STREAMER (Cooperation with the FEA of Germany on Monitoring of ground level ozone)

  - INCORE (Integrated Concept for Groundwater Remediation)

  - IMAGE-TRAIN (Innovative Management of Groundwater Resources in Europe – Training and RTD Co-ordination)

The FEA has become a partner of central and eastern European countries in the field of all environmental issues.

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The laboratory of the FEA (1)

Accredited testing laboratory for environmental analysis and GMO analysis

according to the international standard EN ISO/IEC 17025

- Sampling
- Physical-chemical analysis
- Organic and inorganic trace analyses
- Molecular biological analysis
- Scanning electron microscopy

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The laboratory of the FEA (2)

- Environmental control
- Monitoring programmes
- Development of new analytical methods
- Chemical and GMO analysis for third parties
- Co-operation with international partners
- Training and consulting

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Résumé

Being part of different national and international networks is key to the continued success of the FEA

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Résumé

Ismo Tiainen
*Director International Consulting Service, Finnish
Environment Institute (SYKE) Finlandia*

Environmental Administration
Regional Administration

Regional Environment Centres

1 Uusimaa
2 Southwest Finland
3 Häme
4 Pirkanmaa
5 Southeast Finland
6 South Savo
7 North Savo
8 North Karelia
9 Central Finland
10 West Finland
11 North Ostrobothnia
12 Kainuu
13 Lapland

Environmental Permit Authorities

I Western Finland
II Eastern Finland
III Northern Finland

SYKE

Finnish Environment Institute

- research and development centre
- functions under the Ministry of the Environment and the Ministry of Agriculture and Forestry
- established on 1st March 1995
- appr. 600 employees
- 400 with a university degree

More information www.environment.fi/syke

SYKE

Expert Services
- Nature
- Hydrological services
- Water resources management
- Environmental management
- Chemicals
- Environmental damages
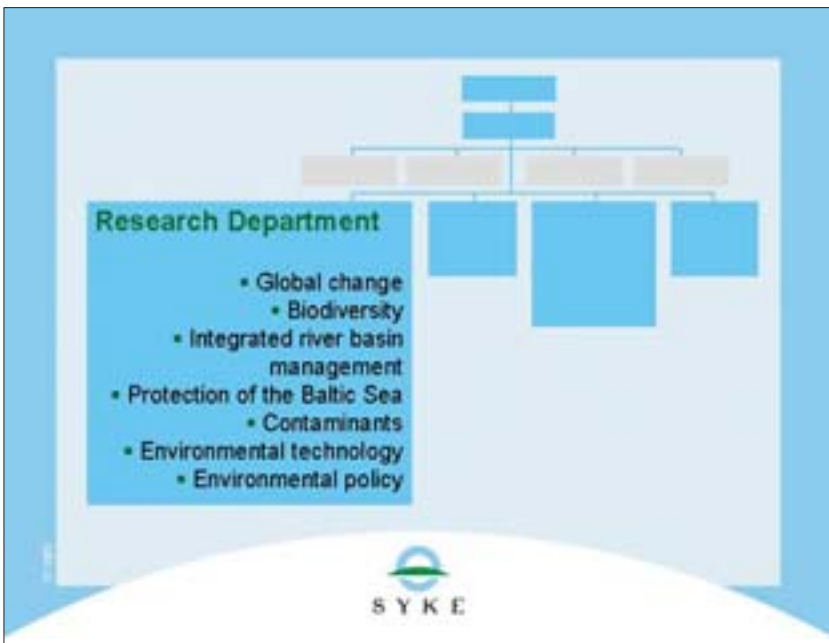
SYKE

Mission statement

We are a research and development institute integrating expertise from a wide range of disciplines. We produce information and solutions promoting ecologically sustainable development.

SYKE

Values

Expertise, reliability, openess
and the well-being of our
personnel.

Vision for 2010

We are a recognised pioneer in the
environmental field.

SYKE

Main strategies

- Our R&D work is nationally and internationally recognized.
- We produce high-quality assessments and scenarios by combining expertise from different fields.
- Our monitoring and data systems are up-to-date.
- R&D work, expert tasks and statutory duties support each other.
- Priority areas and other strategically important tasks have adequate resources.
- Personnel is highly motivated and professional.

SYKE

Customers

- Ministries (Environment, Agriculture and Forestry)
- Regional Environment Centres
- Universities
- Other research and expert institutions
- Other authorities

- Industry and commerce
- Municipalities
- Media
- Organizations and citizens

SYKE

Products and services

- R&D reports and articles
- Plans and programmes
- Guidelines, guide books, standards
- Reports of commercial projects and consultancy
- Assessments and monitoring reports
- Expert reports, expert services and statements
- Authority decisions
- Data and modelling systems, methods and tools
- Press releases, brochures, journals, books

SYKE

Division of costs in 2001

Computer services — 21
Administrative services — 10
Director's office and other management — 10
Press and Information — 5
International consulting — 9
Research laboratory — 20
Environmental information and education — 8
Research and development of policy instruments — 12
Environmental impacts research — 25
Pollution prevention and abatement — 28
Hydrology, water resources and combating of pollution — 39
Nature conservation and land use — 21
Chemicals supervision and risk assessment — 12

Total 220 FIM million

SYKE

International research cooperation

- EU IV Framework Programme
  - Environment and climate
  - Marine science and technology
- EU LIFE Environment
- EU V Framework Programme
  - Energy, environment and sustainable development
- Nordic Council of Ministers
  - Working group on the marine environment and air pollution
  - Working group on environmental data and monitoring

SYKE

International Consulting Services

The International Consulting Services develop and co-ordinate the commercial international activities of SYKE. Consulting covers the whole expertise of the Institute from environmental research and monitoring to administration and management.

- **Principal Financiers** Ministry for Foreign Affairs of Finland, Ministry of the Environment of Finland, European Union, Nordic Investment Bank, World Bank
- **Main Geographical Areas** Russia, Baltic States, Kyrgyz Republic, Mozambique, Ethiopia, Egypt, Namibia and Nicaragua

SYKE

WWW service
www.environment.fi/syke

Environmental administration

- Current
- Finnish environment
- Housing and building
- Land use

- Research
- International cooperation
- Organisation and information
- Contacts

SYKE

M. Mohamed Mekkaoui
*Directeur Général de l'Agence Nationale
d'Aménagement du Territoire (ANAT) Algeria*

*«Aspects de la politique d'environnement
et développement durable en Algérie»*

Introduction

L'Algérie se trouve dans une phase de transition environnementale concomitante à celle de sa transition économique. En effet, parallèlement aux efforts d'investissements entrepris depuis l'Indépendance, la dégradation écologique du pays a atteint un niveau de gravité qui risque non seulement de compromettre une bonne partie des acquis économiques mais également de limiter les possibilités de gain de bien être des générations futures.

L'ampleur des problèmes écologiques étant étroitement liée au processus de développement économique et social du pays. Malgré des richesses naturelles appréciables et des investissements massifs dans le développement du capital physique et humain, il est évident aujourd'hui que les causes principales de la crise écologique sévère que vit l'Algérie sont fondamentalement d'ordre institutionnel et sont étroitement liées à la carences des politiques et programmes du passé notamment dans les domaines de la rationalisation de l'utilisation des ressources naturelles de l'aménagement du territoire, de l'efficacité et de la transparence des dépenses publiques - de la sensibilisation et de l'association des populations et des usagers aux processus décisionnels de la participation du secteur privé de la capacité de coordination intersectorielle et de la qualité de la gouvernance des institutions publiques C'est pour cela que l'Algérie a décidé d'investir dans le développement durable. Ceci constitue le principe fondamental de la stratégie de l'environnement et du plan national d'action pour l'environnement et le développement durable (P.N.A.E-D.D) et signifie que l'Algérie entend donner une place prépondérante aux aspects sociaux et écologiques dans ses choix de modèle de société et de développement économique.

D'une manière générale, le recensement des problèmes fait apparaître:
- des ressources en eau limitées de faible qualité et mal réparties à travers un territoire national très vaste;
- des ressources en sol et en couvert végétal en dégradation constante;
- une frange côtière en dégradation;
- une urbanisation très mal maîtrisée, très souvent dans des zones sensibles;
- des pollutions industrielles en progression posant de sérieux problèmes de santé publique;
- un cadre institutionnel et juridique déficient.

De ce qui précède, nous retenons que l'étendue des problèmes environnementaux en Algérie affectent:

- La santé et la qualité de vie de la population;
- La productivité et la durabilité du Capital Naturel;
- L'efficacité de l'utilisation des ressources et la compétitivité de l'économie en général de l'environnement global.

Par conséquent, ces quatre catégories servent d'objectifs stratégiques de qualité aux actions préconisées.

Les objectifs nationaux de la stratégie environnementale sont donc les suivants (résultats attendus à moyen et long terme):

- améliorer la santé et la qualité de vie des citoyens;
- conserver le capital naturel et améliorer sa productivité;
- réduire les pertes économiques et améliorer la compétitivité (l'éco-efficacité);
- protéger l'environnement global.

Ces objectifs ont été détaillés et évalués dans le rapport du P.N.A.E-D.D, on citera à titre d'exemple les actions prioritaires pour chaque catégorie.

Pour ce qui est de la santé et la qualité de vie:

- Améliorer l'accès des citoyens à l'eau potable;
- Améliorer le service public de l'assainissement;
- Gérer rationnellement les déchets solides et ménagers et les déchets spéciaux;
- Combattre la pollution industrielle;
- Améliorer la qualité de l'air;
- Renforcer la gouvernance environnementale;
- Développer les espaces verts;
- Améliorer la gestion du patrimoine culturel.

Quant à la Conservation et l'Amélioration du Capital Naturel:

- Améliorer la gestion des sols et lutter contre la désertification;
- Gérer rationnellement les eaux d'irrigation;
- Reconstituer et étendre le patrimoine forestier;
- Conserver la biodiversité;
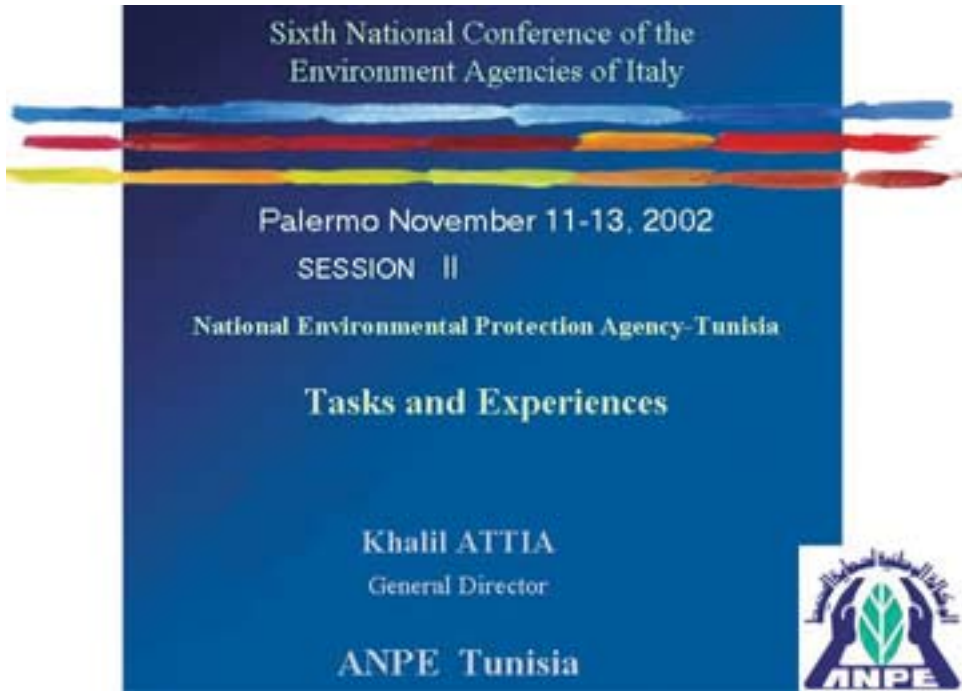- Protéger le littoral.

D'autres actions précises concernent la compétitivité et l'efficacité économique et l'environnement global.

La mise en ouvre du P.N.A.E-DD nécessite une renforcement de la gouvernance environnementale aux différents niveaux d'orientation, de décision et d'exécution de la politique environnementale par des programmes de formation et d'amélioration des capacités institutionnelles. La participation du secteur privé et public, des associations doit être organisée à tous les niveaux.

En plus des structures du Ministère de l'Aménagement du Territoire et de l'Environnement, la mise en place d'un Comité Interministériel, instance de pilotage pour assurer toutes les missions, permettra de suivre sur le terrain la réalisation des projets retenus. Je termine cette courte communication en rappelant cette définition du développement durable « Le développement durable est celui qui répond aux besoins du présent sans compromettre la capacité des générations futures de répondre aux leurs. C'est un processus de changement par lequel l'exploitation des ressources, l'orientation des investissements, des changements techniques et institutionnels se trouvent en harmonie et renforcent le potentiel actuel et futur de satisfaction des besoins des hommes « (in.G.H. Brundtland).

M. Khalil Attia
President and Director General, ANPE Tunisia

Sixth National Conference of the Environment Agencies of Italy

Palermo November 11-13, 2002
SESSION II

National Environmental Protection Agency-Tunisia

Tasks and Experiences

Khalil ATTIA

General Director

ANPE Tunisia

Presentation Plan

- The ANPE Creation, Mission & Functioning
- Environmental Awareness Raising
- Preventing activities
- EIA studies
- Tunisian Observatory for the Environment and Development
- Air Control and Monitoring Programme
- Control and Monitoring of industrial pollution
- Depollution tools
- Solid Waste Management
- Urban parks and cities embellishing
- Sustainable Development
- Partnership

Creation & Mission

- Created in 1988 the National Agency for Environmental Protection is a public institution supervised by the Ministry of Agriculture, Environment and Water Resources.
- For more than a decade, the ANPE has been working for a cleaner, healthier environment to the Tunisian people.
- It provides the Government with a coherent and effective mechanism as regards to environmental protection, in particular to save the environment and to fight pollution.

Functioning

- The ANPE is led by a General Director and employs **300** people in Headquarters offices, one observatory and six regional offices across the country.
- The employees are highly educated and technically trained staff, more than half of whom are engineers, scientists, and environmental protection specialists.

Environmental Awareness Raising

Environmental awareness raising , education and information are one of the key features of ANPE activities.

The aim is to promote an environmental culture allowing a backing of eco-citizenship and raising environmental awareness among the population, especially youth people, and various socio-economic actors.

Environmental Awareness Raising
Objectives

Specific objectives of this key activity include, but not limited to:

- Sensitize both individuals and community groups to the importance of the environment and the need to preserve natural resources (publications, seminaries on resources economy, TV spots, parcs animation....)

- Get the youth, in particular, and the citizens, in general, to adopt a positive attitude towards the environment and sustainable development.

- Set-up in the citizen an environmental culture with a view to eliciting from him an efficient participation in support to the national efforts in environmental related areas.

Environmental Awareness Raising Activities

Specific activities include among others :

✓Training of 300 trainers ;

✓Elaboration of 3 guides and 8 "environment stakes" (soil, water, heritage, etc.) ;

✓Elaboration of brochures, booklets, posters, CD's ;

✓Organization of national contests related to different environmental topics ;

✓Organization of a forum for environmental clubs' moderators ;

✓Development of partnerships with environmental NGO's.

Preventing activities

The ANPE is also responsible for understanding and preventing pollution.

This is achieved by setting up several tools including, among others proposing environmental standards and legal frameworks :

- Environmental Impact Assessment (EIA) studies,
- the Tunisian Observatory for Environment and Development (OTED),
- The National Network for Monitoring the Quality of the Air (RNSQA).

EIA studies

- Since 1991, the Environmental Impact Assessment study has been used as a decision making tool to predict and mitigate the negative environmental effects of new projects.
- The decree 362-91 of March 13, 1991 sets the conditions, methods and modalities to conduct this type of studies.
- For the year 2001, the ANPE received 1064 EIA. Of these, 330 were approved, 19 were rejected while the remainders are still under evaluation.

Tunisian Observatory for the Environment and Development

- The Tunisian Observatory for the Environment and Development (OTED) was established in 1995 in cooperation with the UNDP.
- The ANPE is the main body in charge of the OTED. The key activity of this Observatory is to collect, produce, analyze, manage and distribute information on the state of the environment.
- A national base of indicators of sustainable development has been developed
- The data and the products supplied by OTED will allow various actors and decision makers concerned to make development choices on the base of close knowledge of the situation.
- It will also provide environment managers with an easy and rapid tool to define the actions to be taken within the context of sustainable development.

Air Control and Monitoring Programme

Air Control and Monitoring Programme which has been developed aims at an improvement of air quality through the identification, characterization and reduction of the sources of pollution, both fixed (industrial emissions) and mobile (urban transportation). This programme is conducted primarily by the ANPE. Its implementation rests on the following principles:

- Prevention : by assessing the impacts of industrial activities on air quality and the citizens living conditions, and by encouraging the use of clean technologies.
- Control and monitoring: by providing reliable technical and scientific data on the composition of air, in real time and for a given zone.
- Participation and partnership: by informing and sensitizing private and public industrialists, as well as, decision makers.
- Polluter has to bear the necessary depollution expenses and compensate the parties affected (polluter-payer principle).

Air Control and Monitoring Programme

The ANPE is currently setting up a national network for monitoring ambient air quality (RNSQA) comprising 13 fixed stations (for the time frame 2006) in different governorates including Tunis, Sfax, Gabes, Bizerte, Sousse, Gafsa and Kairouan, with a view to defining the quality of ambient air and providing continuous and regular information while monitoring the evolution of the indicators established for this purpose. For the period of 1996-2002, the ANPE has set up 7 fixed and 1 mobile stations.

Control and Monitoring of industrial pollution

The ANPE gives a paramount importance to the monitoring of industrial pollution with a view to urging industrialists to equip themselves with treatment facilities, as well as to encourage them to adopt cleaner production

processes and technologies and to recycle their liquid and solid wastes. Three types of control are usually carried out by the Agency:

– systematic monitoring.
– sector-base monitoring.
– instantaneous monitoring.

Control and Monitoring of industrial pollution

- The systematic monitoring consists in establishing an exhaustive inventory of the entire industrial, handcraft, and service activities. In this context, 4000 control operations were conducted during the first half of the year 2002, resulting in 272 offences against the environment.

- The sector-based monitoring aims basically at recording the state of the environment within a given sector so as to identify the causes of pollution and to assess its importance. For this year, the agency has focused on used oil collection sector and quarries exploitation.

- Instantaneous monitoring aims at handling the claims made to the Agency by different parties with a view to determine the responsibility of each party and to draw up a remediation programme. During the first half of the current year, the ANPE handled some 272 claims.
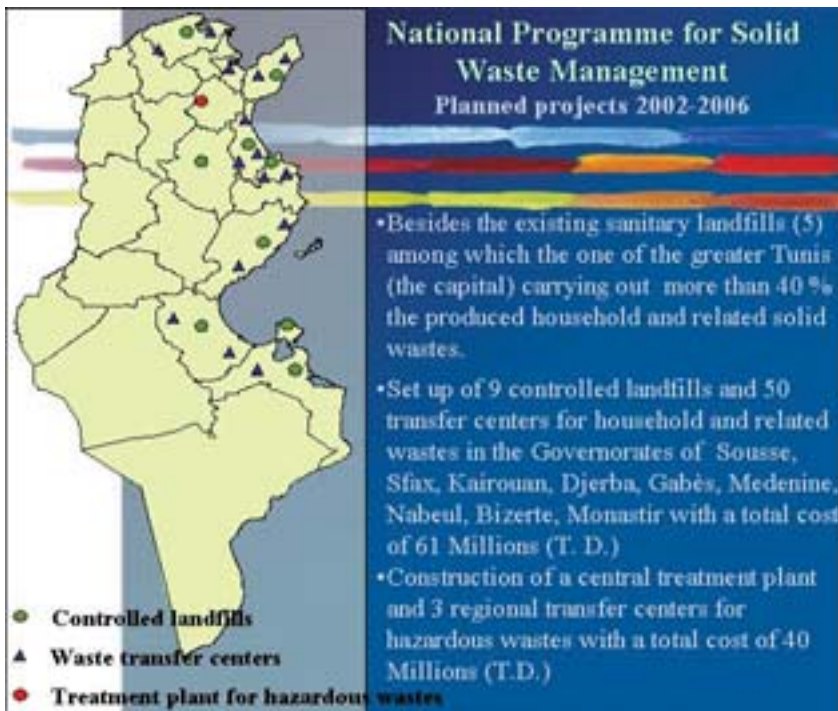
Depollution tools

- In parallel to the monotoring tasks, the ANPE has developed various depollution tools to encourage and assist industrialists to adopt cleaner technologies and acquire effective means and processes to reduce harmful effects. Depollution tools include, among others, the depollution fund (FODEP) the depollution studies, and the depollution programme-contract.

- FODEP was established in 1993 with the financial support of the EIB and KFW Germany.

- By the end of 2001, 287 projects had been assisted by this fund representing 14.5 million (T. D.)

- In 2001, the ANPE also received 63 depollution studies relating to preliminary treatment of industrial wastes. 29 studies were approved, 8 are still under evaluation, 23 are pending awaiting additional information and 3 studies were rejected.

Solid Waste Management

- The National Environment Protection Agency has been assigned the responsibility for the National Programme for Solid Waste Management (PRONAGDES).

- This programme includes regulatory, legal, technical, financial and institutional components. The overall objectives of the waste management policy have been clearly outlined by the agency.

- Priority is given to the reduction at sources, recycling and upgrading (value enhancing) of wastes, as well as reduction of dumping of ultimate wastes.

- The regulatory base has already been established and has steadily developed.

- It is mainly based on the principles of "polluter-pays" and "producer-recovers".

National Programme for Solid Waste Management
Planned projects 2002-2006

- Besides the existing sanitary landfills (5) among which the one of the greater Tunis (the capital) carrying out more than 40 % the produced household and related solid wastes.
- Set up of 9 controlled landfills and 50 transfer centers for household and related wastes in the Governorates of Sousse, Sfax, Kairouan, Djerba, Gabès, Medenine, Nabeul, Bizerte, Monastir with a total cost of 61 Millions (T. D.)
- Construction of a central treatment plant and 3 regional transfer centers for hazardous wastes with a total cost of 40 Millions (T.D.)

- ◉ **Controlled landfills**
- ▲ **Waste transfer centers**
- ● **Treatment plant for hazardous wastes**

Solid Waste Management

A special attention is also given to the management of plastic packaging wastes.

The public system for the recovery and upgrading of used packaging called eco-Lef was launched in 1997 and became one of ANPE topmost priorities.

This system concerns plastic bags and bottles and metal packaging which contains 100 milliliters or more and which is sold on the domestic market.

Solid Waste Management

Eco-lef System is financed by contributions from members, which are set by the ANPE as a function of the quantities and categories of packaging sold on the domestic market.

A specific collection has been initiated through:

- voluntary contribution, based on a network of containers placed in zones of high packaging consumption,
- remunerated contribution based on Eco-lef points supplied by individual collectors and small companies.

Public-Private Partnership for the collection and upgrading of used packaging

ANPE

Commune

ECO-Lef voluntary collection containers

ECO-Lef remunerated collection points

Sorting

Recycling

Private recyclers

Private collectors

Market

Urban parks and cities embellishing

- The ANPE is involved in creation of urban parks and cities embellishing with an objective to boosting the life quality of citizens.
- A national programme for the setup of 100 parks was initiated in 1996, with a view to protecting suburban forest areas from urbanization invasion.
- In this regard, the objective set is to have a park for every 60000 inhabitants of the year 2011.

Urban parks and cities embellishing

In terms of green space, the target was to achieve a ratio of 13 m² per inhabitant in 2006 in urban areas.

In addition, the ANPE participates in the embellishing of the main access roads to towns and strategic crossing points in the context of a programme intended to improve the aesthetics of major roads leading to sovereignty headquarters, airports, and other border crossing points.

Sustainable Development

The ANPE is in charge of the Secretariat of the National Commission for Sustainable Development as well as the Secretariat of the National Commission on the prevention and the intervention against marine pollution.
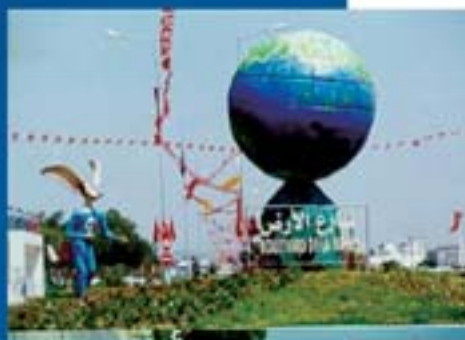
In addition the ANPE was assigned the following international conventions:

- The Basel Convention on the control of cross-boundaries movement of hazardous wastes and their elimination, adhered to by the Tunisian Republic by law n°95-63 of 10 July 1995 (JORT n°56 of 14 July 1995, p1500)

- The Montreal Protocol (1987) on the Ozone depleting products.

Partnership

- To ensure more successful and effective implementation of its various programmes, the ANPE has adapted a strategy of a proactive partnership and an opening on the world.

- In this context, the Agency has established a national network of public and private partners as well as Environmental NGO's.

- The ANPE also benefits from a fruitful bilateral and multilateral cooperation in building its human, technical and financial capacities.

- International Cooperation projects will be discussed and presented in our second paper.

Dahlia Lotayet
Director of Planning and Technical Cooperation, EEAA Egitto

Environmental Protection is a Must rather than a Luxury

President Hosni Mubarak

Developmental Priorities of Egypt

- Improving living conditions and rural development
- Employment and job creation
- Export promotion

Ministry of State for Environmental Affairs, EGYPT
Egyptian Environmental Affairs Agency (EEAA)

VISION

Achieving a sensitive balance between the three pillars of sustainable development; economic, social and environmental.

Through

Integration of environmental dimension within the context of the economic and social developmental strategy of Egypt 2002/2017 in a comprehensive way.

Ministry of State for Environmental Affairs, EGYPT
Egyptian Environmental Affairs Agency (EEAA)

Policy Directives of Ministry of State for Environmental Affairs

Ministry of State for Environmental Affairs, EGYPT
Egyptian Environmental Affairs Agency (EEAA)

❖ Support preventive environmental policies and promote sustainable environmental management systems

   ❖ Implement provisions of Law 102/ 1983 and Law 4/1994

      ❖ Increase competence of the Egyptian export market through compliance with environmental international standards

         ❖ Coordinate and collaborate with the competent relevant ministries, governorates and institutions

            ❖ Develop and upgrade natural protectorates and protect bio-diversity

Ministry of State for Environmental Affairs, EGYPT
Egyptian Environmental Affairs Agency (EEAA)

❖ Enhance the role of the civil society, NGOs, federations and youth centers

   ❖ Foster partnership with and enhance the role of the private sector

      ❖ Integrate gender issues in environmental policies and programs

         ❖ Use and promotion of market based instruments

            ❖ Meeting Egypt's commitment toward regional and international conventions and agreements

               ❖ Institutional strengthening and finalization of EEAA's structure and its regional branch offices to implement previous programs

Ministry of State for Environmental Affairs, EGYPT
Egyptian Environmental Affairs Agency (EEAA)

EIA studies

- Since 1991, the Environmental Impact Assessment study has been used as a decision making tool to predict and mitigate the negative environmental effects of new projects.
- The decree 362-91 of March 13, 1991 sets the conditions, methods and modalities to conduct this type of studies.
- For the year 2001, the ANPE received 1064 EIA. Of these, 330 were approved, 19 were rejected while the remainders are still under evaluation.

Agency Mandate

Under Law 4 / 1994, Article 5, the mandate of the
Egyptian Environmental Affairs Agency
is to protect and promote the environment through:

« Formulation of Environmental Policy and Plans

« Direct responsibility for the management of Natural Protectorates

« Competent national authority for strengthening environmental relations at the bilateral, sub-regional, regional and international levels

« Development and implementation of pilot projects

« Recommendation of legal procedures and preparation of draft legislation

Ministry of State for Environmental Affairs, EGYPT
Egyptian Environmental Affairs Agency (EEAA)

Key principles

- Cooperation
- Coordination
- Participation

Ministry of State for Environmental Affairs, EGYPT
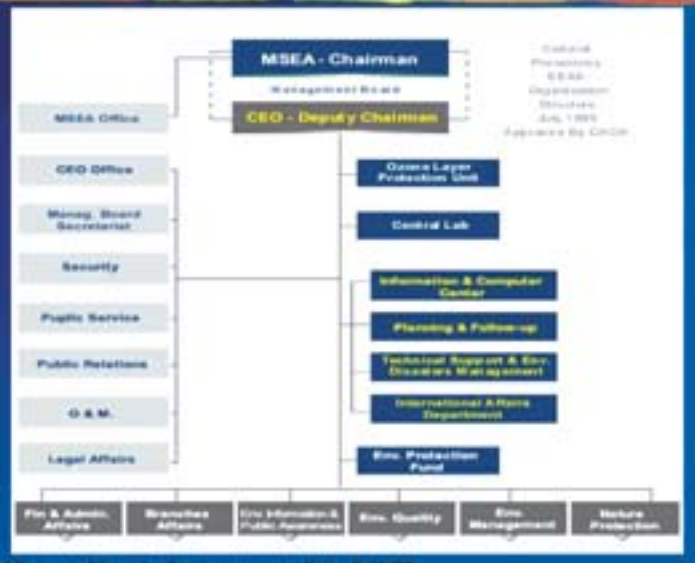Egyptian Environmental Affairs Agency (EEAA)

EEAA Role & Responsibilities

- Information gathering, processing and dissemination;
- Formulating standards and legal requirements;
- Compliance and enforcement under the law;
- Awareness, education and training; and
- Environmental management.

Ministry of State for Environmental Affairs, EGYPT
Egyptian Environmental Affairs Agency (EEAA)

Ministry of State for Environmental Affairs, EGYPT
Egyptian Environmental Affairs Agency (EEAA)

Cooperation Experience

Ministry of State for Environmental Affairs, EGYPT
Egyptian Environmental Affairs Agency (EEAA)

Euro-Mediterranean Cooperation

- Bi-lateral cooperation
- Regional cooperation
  - MAP
  - METAP
  - SMAP
  - LIFE-THIRD COUNTRIES
  - Etc....
- Multi-lateral environmental conventions & agreements

Ministry of State for Environmental Affairs, EGYPT
Egyptian Environmental Affairs Agency (EEAA)

Main Features of

Developmental Cooperation

- From reactive to pro-active

- Demand driven: national priorities and needs

- From grants to cost-sharing and national contributions

- Ownership and accountability

Ministry of State for Environmental Affairs, EGYPT
Egyptian Environmental Affairs Agency (EEAA)

Thank You

Ministry of State for Environmental Affairs, EGYPT
Egyptian Environmental Affairs Agency (EEAA)