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International Workshop on
« Environmental Performance Indicators »

Beirut, December 15-17 1997

organised by METAP - MAP/Blue Plan
with the support of UNOPS and EC/LIFE
and the cooperation of the Lebanese Ministry of Environment

Republic of Lebanon
Office of the Minister of State for Administrative Reform
Center for Public Sector Projects and Studies
(C.P.S.P.S.)

REPORT OF THE WORKSHOP

prepared by the Blue Plan for the Mediterranean
February 1998



METAP - MAP/Blue Plan

International Workshop on « Environmental Performance Indicators »

Atelier international sur « Les Indicateurs de Performance Environnementale »

The major objectives of the Programme Performance Monitoring Indicators/PPM are:

1. to help countries monitor progress in achieving their environmental objectives in regard to their national and international commitments and
2. to provide the incentives and impetus for the countries to ultimately build and own an efficient observation, monitoring and evaluation system

and this through a series of steps that will consist, for this workshop, in :

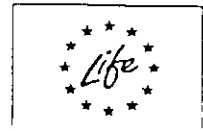
- review and update the indicators conceptual framework and methodologies;
- clarify the relation between indicators and decision-making, and exchange on the role of indicators in the decision-making process;
- develop capacity in identification, elaboration and use of thematic national and project performance indicators;
- decide and agree on follow-up activities at regional, national and project levels.

Les objectifs principaux du programme « d'indicateurs de suivi et de performance »/PPM sont :

1. aider les pays à suivre les progrès pour atteindre leurs objectifs environnementaux eu égard aux engagements nationaux et internationaux, et
2. inciter les pays à mettre en place et acquérir un système efficace d'observation, de suivi et d'évaluation,

et ceci à travers une série d'étapes qui consisteront, pendant cet atelier, à :

- revoir et mettre à jour le cadre conceptuel et les méthodologies des indicateurs,
- clarifier la relation entre indicateurs et prise de décision et échanger sur le rôle des indicateurs dans le processus de prise de décision,
- développer la capacité pour l'identification, l'élaboration et l'utilisation d'indicateurs de performance, aussi bien de projets que thématiques à l'échelle nationale,
- décider et convenir d'un suivi des activités tant aux niveaux régional et national que des projets.



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1. Summary

The first major activity of the METAP - MAP/Blue Plan *Programme Performance and Monitoring* initiative was the organisation of a three-day International Workshop on "*Environmental Performance Indicators*", held in Beirut, Lebanon, December 15-17 1997.

The **purpose** of the workshop was to:

- review and update the indicators conceptual framework and methodologies;
- clarify the relation between indicators and decision-making, and exchange of the role of indicators in the decision-making process;
- develop capacity in the identification, elaboration and use of national thematic and project performance indicators;
- decide and agree on follow-up activities at regional, national and project levels.

The workshop was conceived and prepared by the Blue Plan in cooperation with Metap experts concerned, and with a World Bank consultant; it was mainly funded by Metap through UNOPS in addition to support from the European Commission (through Blue Plan/LIFE project on indicators), and hosted by the Lebanese Government and its Ministry of Environment.

An average of 55 **participants** attended the workshop: 32 of them represented the 13 METAP beneficiary countries, 13 from METAP partner organisations, 6 from invited international/regional organisations, and 5 from the MAP/Blue Plan.

Official opening. The workshop was officially opened by the Lebanese Minister of Environment, H.E. Mr. Akram CHEHAYEB. Mr. Christian CAREAGA (EIB-Metap Coordinator) and Mr. Rashid AYADI (UNDP-Beirut) welcomed the participants and expressed their interest in the indicators issue. Mr. Arab HOBALLAH (MAP/Blue Plan Deputy Director) presented the workshop objectives and programme, and provided an overview of the importance given in the Mediterranean region to developing indicators.

During this workshop, conceptual/organising frameworks used at the international and national levels for developing indicators were reviewed, several experiences were shared, before going into the working group sessions on National thematic indicators and on Project indicators.

National indicators. A working document and a questionnaire prepared by the Blue Plan were submitted to discussion. They contain a list of thematic indicators related to two METAP III priority fields: integrated water and coastal management; arresting and preventing pollution at hot spots. Since both fields are wide and complex, only four relevant issues were tackled and proposed for discussion during the workshop:

- water resources management,
- water demand management,
- industrial pollution,
- waste management.

1. Participants to the Workshop recognised the need to share a common «core» set of indicators in the Mediterranean countries for monitoring national environmental conditions. However, the common set should remain very open and flexible as country-specific conditions must be better taken into account. Besides, new indicators may need to be included according to countries' experiences.

2. The conceptual Pressure-State-Response framework was recognised as quite useful to organise environmental indicators, even if it is not always simple to apply. As regards

Response indicators and especially those concerning Institutions, it was suggested that this dimension requires further development.

3. It was also suggested to improve efforts on methodological issues, especially definitions. The need for a carefully defined terminology, building on existing definitions having a sound scientific baseline, was pointed out. It was recognised that Indicators sheets would be very useful for future activities.

4. Data availability (and on a regular basis) was pointed out as a big challenge. And so is the need to identify information producers and clarify relationships with Statistical agencies.

5. As regards assessing environmental performance, national objectives/goals and related quantitative targets are generally not available in the different Mediterranean countries. This could be explained by the fact that the process of setting national policies (Sustainable Development Strategies and National Environmental Action Plans) is still on-going in many countries. However, a few quantitative reference values are available especially concerning health risks due to pollution and related to water and air quality control, emissions and pollutant discharges control, treatment systems efficiency. Unfortunately, these are fields where data are not always regularly available and data collection would require costly monitoring systems.

Project indicators. Four case studies were presented concerning water sanitation management, industrial pollution, waste management, and institutional building in environmental management. Two of them were nation-wide projects; it took a considerable time to present the countries contexts.

1. It was recognised the importance of having indicators at an early stage in designing projects, for identifying the needs and the outcomes expected, and for monitoring progress towards them. Indicators can also contribute to a better definition of project objectives which are not always clear.

2. Generally, the experimental methodology proposed for devising project indicators was felt complicated (especially the distinction between outputs, inputs, impacts, linkages, multiplier effects), and somehow rigid, limiting brainstorming in working groups. Clearer definitions would be needed. Generally, participants remained at the 'macro' level. Focus was thus made on identifying the objectives of a project and the specific goals of sub-projects, and on indicators able to assess performance in reaching those objectives/goals. It was recognised that the most useful indicators are those related to *impacts* on the state of the environment which are dependent on outcomes.

3. As regards the institutional building case study, the working group had to face delicate conceptual and methodological difficulties in applying a framework that was felt inappropriate for projects in the institutional field, especially for very complex projects as the one chosen. Main difficulties concerned the identification of clear objectives and goals in this kind of projects, the distinction to be made between efforts and results, and between administrative performance and environmental performance.

General suggestions. Working groups were sometimes very large, up to 15 participants. More time is needed for making real progress on methodological aspects, especially in large groups.

The Workshop participants invited the METAP partners to improve efforts on disseminating information on the METAP programme to all countries concerned. This is all the more important since in the different beneficiary countries, national focal points (and persons concerned) are subject to changes.

Follow up actions. Mr. Arab HOBALLAH (Blue Plan) presented the different activities envisaged for the follow-up of the programme. They mainly consist of:

1. The indicators lists that have come out from the working group sessions will be reviewed and submitted to the different Workshop participants.
2. A « Methodological Note » will be prepared on the basis of the background documents discussed during this workshop, reviewed and improved according to the different suggestions:
 - methodological difficulties/issues will be tackled concerning indicators at the national level and at the project level;
 - examples of Indicators sheets (according to the UN/CSD guidelines) will be included.
3. The common « core » set of indicators should be sharpened during the next sub-regional workshops. In order to assess environmental performance, national targets set by the countries and reference values adopted by them, should be added and better defined.
4. Since institutional issues have been recognised as important but requiring a specific approach, a « chantier » on institutional and capacity building indicators could be opened in cooperation with the UNDP-Capacity 21 Programme.
5. A « Progress report » will be prepared and disseminated, on a 4-month basis. It will include two types of information:
 - information on Indicators (usefulness, adaptation, reference sources);
 - information on Activities.

The next sub-regional workshops (certainly 2, probably 3) will take place during 1998, one in a Maghreb country, another one in a Machrek and/or an Adriatic country. The purpose of these workshops is to share experience and to provide technical assistance at the regional level, but the work is to be improved and deepened in the countries, by the persons concerned.

Workshop closure. Ms. Tehmina AKHTAR (METAP Regional Programme Coordinator), Mr. Arab HOBALLAH, and Mr. Mounir BU GHANEM (Advisor to the Lebanese Minister of Environment) thanked the group for their dynamic participation and the work achieved. The warm Lebanese hospitality and the excellent arrangements made for the workshop were highly appreciated.

Closing remarks were made by Mr. Lucien CHABASON (UNEP/MAP Coordinator) who pointed out the importance given to indicators by the Mediterranean Action Plan, the Contracting Parties to the Barcelona Convention, the Barcelona Convention Secretariat, and the recently created Mediterranean Commission for Sustainable Development. Developing indicators for monitoring environmental conditions was already a difficult exercise; devising environmental performance indicators for assessing the results of policies now add supplementary difficulties. However, this kind of indicators is extremely important to show countries efforts and can constitute a powerful tool for appealing Finance Ministries. The exercise is a main challenge facing the Mediterranean countries.

2. Background

Mediterranean Action Plan and Blue Plan

The **Mediterranean Action Plan** (MAP) has been active since 1975 in formulating and adopting a series of legally binding agreements. With its Regional Activity Centres, including the Blue Plan, it recommends measures through which individual Mediterranean countries can address resource degradation and pollution.

After the Earth Summit in 1992, significant efforts have been made to integrate Sustainable Development concerns in the Mediterranean region:

- a Mediterranean Environment and Development *Observatoire* was initiated by the Blue Plan with the European Union's assistance in 1993;
- an Agenda MED 21 was prepared in 1994, with an important involvement of the civil society;
- sustainable development principles were taken into account in the amended Barcelona Convention and Phase II of MAP was endorsed in 1995, at the time of MAP's twentieth anniversary;
- the related Protocoles were also renewed especially that related to land-based sources while new Protocols were signed concerning protected areas and biological diversity as well as hazardous waste;
- the Mediterranean Commission for Sustainable Development (MCSD) was established in 1996.

Within this context, **indicators** are considered as important tools for decision making, and constitute a major component of the *Observatoire*, the Agenda MED 21 and the Commission (MCSD). Once the launching phase of the *Observatoire* (1993-1996) was completed, the Contracting Parties to the Barcelona Convention requested the Blue Plan to replace the work initiated on environmental indicators within the frame of Sustainable Development Indicators in the Mediterranean region. Later on, this subject was also considered as a priority concern for the MCSD.

Since the work on indicators requires "downstream" and "upstream" complementary activities, the Blue Plan has strengthened cooperation with Eurostat on environmental statistics, with the European Environment Agency on indicators for State-of-the-environment reporting, with OECD and the French Institute for Environment on indicators framework and presentation aspects, and finally with METAP on "Environmental Performance Indicators".

With the exception of Jordan and Palestine, **MAP** and **METAP** work with and for the same countries, mostly the same national agencies and often the same persons. Moreover, they usually concentrate their efforts on similar problems and projects. Therefore, for the sake of synergy, in order to avoid or reduce duplication, and to come out with more and better added-value, METAP and MAP have decided to cooperate on this important question of Environmental Performance Indicators that will obviously benefit from other indicator activities within METAP partners, as well as within the Mediterranean Action Plan, especially the *Observatoire* and the MCSD.

METAP III

METAP is a cooperation programme among the four partner organisations, the European Commission, the European Investment Bank, the United Nations Development Programme, and the World Bank. METAP was created in 1990 as a partnership between donors and 13 countries on the southern and eastern rims of the Mediterranean.

Since 1990, METAP has contributed in bringing together the southern and eastern countries of the Mediterranean to better address those common environmental problems. During the first two phases of the program (1990-1995), METAP provided assistance to the Mediterranean countries for carrying out pre-investment activities for priority environmental projects, formulating sound policies, and building the necessary institutional capacity to implement them. Funds were mobilized to support nearly 100 technical assistance activities which have helped the developing countries of the region initiate environmental action.

The **third phase of the program** (1996-2000) was officially launched in April 1997. METAP III incorporates a country driven approach to developing and managing the METAP portfolio of individual country activities and of regional initiatives.

METAP III technical and financial assistance focuses on three **priority areas** of environmental management in the region:

- integrated water and coastal resources management,
- addressing emerging pollution problems at "hot spots",
- capacity building and participation.

The portfolio proposal for each country emphasizes in-country strengthening capacity to identify and prepare investments in those priority areas.

Gradually, METAP functions are being transferred to the region. A Regional Facility has been established at Cairo, consisting of a Project Preparation Unit (PPU) and a Capacity Building Unit (CBU), together with the UNDP Regional Bureau for Capacity Building (RBCP). These units comprise international and regional staff and provide continuing support in policy formulation, project preparation, institutional building, and regional cooperation.

In designing METAP III, attention was directed towards ensuring the **complementarity of the program's activities** with other important and inter-related initiatives taking place in the Mediterranean region, especially with MAP and the preparation of National Environmental Action Plans.

- METAP complements MAP through its capacity building activities in coastal zone management, pollution control, and the formulation of monitoring and performance indicators.
- National Environmental Action Plans (NEAPs) have been completed or are under preparation in nearly every developing country of the Mediterranean. These initial plans constitute the first systematic framework for reviewing and establishing environmental priorities. Together with Sustainable Development Strategies, they are central to the development process. Their periodic evaluation and revision must also take place in order to incorporate changing priorities and needs as new problems arise. Moreover, most countries have numerous sectoral and local plans that are generally not put together in the context of a sustainable development strategy.

METAP III focuses on programs that coordinate and build on existing NEAPs and sustainable development strategies so that priority policies are defined, options for resource requirements and mobilisation are provided, and performance indicators are developed and monitored.

A Program Performance and Monitoring system has been incorporated into METAP's implementation phase to help countries monitor progress in achieving their environmental objectives for which they already have made national and international commitments.

Programme Performance and Monitoring System

The Programme Performance and Monitoring System (PPM) is based on four premises:

- performance monitoring is not a conditionality for METAP financing; rather, it is a gauge of each country's progress;
- participation in the performance monitoring system will be tailored and paced according to country-specific conditions and resources;
- the proposed system is largely based on existing resources, institutions, and other performance monitoring activities;
- the process will yield capacity building and information systems benefits from a collaborative, interactive, and regional approach.

The PPM is a specific field of cooperation between METAP and the Blue Plan, on behalf of the Mediterranean Action Plan.

In addition to providing information on environmental targets and progress achieved, the **objective** of this regional initiative is to provide the incentives, impetus and resources for countries to ultimately build and own an efficient monitoring system, in particular through the emerging network of national environmental *observatoires*, that would support both their national and regional environmental management systems.

This joint activity was launched at an important workshop held in Damascus in January 1996. At the Damascus workshop, the usefulness of the OECD Pressure-State-Response conceptual and working framework for indicators was recognised, a preliminary set of performance indicators more related to METAP portfolio was defined, and a series of needs and follow-up activities was identified. Moreover, three types of performance indicators were introduced related to sustainable development, environmental performance and METAP activities.

Work progress from Damascus to Beirut. For various reasons, the expected or planned follow-up activities were not implemented in the few months that followed up the Damascus workshop. In the two years since then, METAP went through ups and downs, with an obvious impact on the portfolio of projects. Meanwhile, regional and national policies as well as project activities have evolved and so has the work on indicators. In addition, several concerned persons in the countries and in METAP have changed. In fact, only one fourth of the participants to this workshop attended the Damascus one.

The next steps will involve two or three sub-regional stocktaking workshops addressing institutional, information system, monitoring, and demand needs for indicator development, as well as the elaboration and presentation of a set of indicators.



3. Record of the Workshop

Introductory statement

After the official statements made by the Lebanese Minister of Environment, and the representatives of UNDP-Beirut, METAP and UNEP/MAP, Mr. Arab HOBALLAH (MAP/Blue Plan Deputy Director) introduced the workshop programme. It was pointed out that indicators are looked at and used for various purposes: from the widely used economic indicators to OECD environmental ones, from the UN so-called sustainable development indicators to the national and local ones, from simple to complex, from individual to integrated and aggregated.

The development of useful indicators not only requires an understanding of concepts and definitions but also a good knowledge of policy needs. Therefore, questions such as why, how, for whom and by whom are crucial. There is a need for a tool that could steer action for improving observation, monitoring and evaluation throughout the decision making process.

Performance monitoring is now being given more consideration on the agenda of many public national and international agencies. Developing indicators for assessing environmental performance is very useful for the definition of clear objectives and priority setting. By measuring how well (or how poorly) policy and/or projects are being implemented in relation with goals, targets and means, indicators can point out the way towards better approaches and improved management. They can also show how far a country, or a policy, or a project has still to go.

Environmental management is a complex system where political bargaining is still very important and where mechanisms for interaction and consensus building among parties are key elements. Developing indicators contributes and induces sharing a common language with the different stakeholders, and provokes wider interest and implication in a jointly implemented strategy. As regards projects monitoring, in many development strategies and related projects, monitoring is envisaged as a separate activity from policy and project design and implementation. But performance monitoring is not a simple task of identifying a few indicators to be tracked over time. It should be not just added or annexed to the management process. It should be integrated to it as a necessary component of an integrated management approach.

During this workshop conceptual/organising frameworks used at the international and national levels for developing indicators will be reviewed, several experiences will be shared, before going into the working group sessions on National thematic indicators and on Project indicators.

Frameworks for environmental indicators

Mr. Kirk HAMILTON (World Bank) presented the basic concepts and different frameworks for organizing environmental and sustainable development indicators as worked out and used by various countries and organizations.

In recent years, most countries in the world have adopted Sustainable development as the goal for environment and natural resources policy as a result from the Earth Summit in 1992. In many cases this very broad goal has been translated into specific national targets for abatement and control of pollutants, and for the management of natural resources such as forests or soils. This process of goal-setting has been given additional impetus by the development of

environmental policy frameworks or national environmental action plans, which lay out the overall structure for environmental policy. The prime motivation for the current interest in environmental indicators is the need to monitor progress towards those goals.

An indicator is an aggregate or composite of more elementary data which has a meaning or interpretation which transcends the underlying data. Indicators can be used at both the international and the national level as a tool for state-of-the-environment reporting, measuring environmental performance, and reporting on progress towards sustainable development.

In the very recent years, the emphasis has shifted from *descriptive* indicators which are useful for showing trends in the state of the environment to *performance* indicators which show not only trends but distance to targets. The target may be as specified in policy, or a reference value such as a WHO guideline for safe levels of pollution concentrations. Selection criteria for developing and choosing particular indicators relate to three aspects: policy relevance, analytical soundness, and measurability. One of the key determinants of what constitutes a good indicator is whether it provides a link from the measurement of environmental conditions to practical policy options.

Several approaches are being used for organizing sets of indicators in a coherent manner that will aid in the diagnosis and understanding of environmental problems. Choosing one framework and applying it consistently is actually more important than the particular framework that is chosen. According to the degree to which they condense information, three major categories of indicators efforts can be distinguished.

1. **Individual indicator sets** represent the least amount of data aggregation and feature large lists or menus of indicators.

The first example is provided by the OECD's **Pressure-State-Response (P-S-R)** framework which is the dominant organizing framework for environmental indicators due to its manifest strengths: it emphasizes the sources of stress on the natural environment, which is key because these human activities are amenable to change; it is flexible and can apply to a very wide range of environmental phenomena; it emphasizes the causal links between how economies operate and how this impacts the environment. In this framework, the identification of response indicators is useful to indicate whether the institutional response to environmental deterioration is commensurate with the problem. However, indicators of response are the most difficult to construct.

One important variant of the P-S-R is the **Pressure-State-Impact-Response (P-S-I-R)** framework, which adds Impact indicators. No fundamental difference exists between the two frameworks. For countries and institutions that wish to emphasize the current dynamics of environmental change, the direct impacts of human activities, this variant may be useful.

Another example of the "menu approach" is the **United Nations-Commission for Sustainable Development (CSD)** program on indicators. It uses the conventional P-S-R framework (although the "driving force" term is employed) and expands it to encompass not only environmental but also social, economic, and institutional issues. The menu contains 142 indicators structured according to the chapters of Agenda 21, and methodology data sheets have been drafted for each indicator. Eventually, a smaller set of indicators for each subject area would be identified out of the ongoing indicators test exercise.

The third example is the set of indicators developed in the **United Kingdom** by the Department of the Environment, where 21 "families" of issues have been distinguished which are linked to government priorities in environmental and natural resource policy.

2. **Thematic approaches.** Many countries tend to a "mid-size" approach, consisting of developing a small set of indicators for each of the major issues in environmental policy. This

thematic approach is used in Canada, the Netherlands, and the Nordic countries (Denmark, Finland, Iceland, Norway and Sweden). All are based on the P-S-R scheme, in combination with a list of established policy themes.

3. **Systemic Indicators.** Also called "synoptic" or "aggregate" indicators, these indicators are designed to summarize complex phenomena, to derive a single number for indicating whether a complex system is in difficulty. Examples of systemic indicators include material balances, nutrient balances, and "greener" national accounts.

In conclusion, this brief review of international indicator efforts suggests that the P-S-R framework is a *de facto* standard and an excellent starting point if comprehensively applied. Having chosen the P-S-R (or P-S-I-R) framework, the key questions to be answered concern the number of indicators to be developed and the themes or issues to cover. As a general rule, smaller sets of indicators are more useful than large ones, due to the limited ability of the audience, whether decision-makers or the public, to comprehend the picture provided by the indicator set. Moreover, relatively small sets of indicators strongly linked to the major issues in environmental policy appear to be the most useful.

Lessons from experience

International experiences

OECD experience

Mr. Christian AVÉROUS presented the OECD experience in assessing environmental performance in its Member countries. Whether policy objectives and commitments are in fact being met is the essence of appraising environmental performance. It is central to the environmental credibility of governments *vis-à-vis* their own public opinion, other governments, and the international community, as there is now an unprecedented range of domestic and international environmental commitments.

Three main questions relate to the achievement of domestic objectives or the compliance with international commitments:

- 1) To what extent are the objectives achieved? Here, a clear distinction must be made between intentions, actions and results. An **emphasis on results** is central to assessing performance.
- 2) Are the objectives ambitious or modest? or how do these objectives relate to the country-specific context, to the past and current state of the environment, natural resource endowment, economic structure and development levels, and demographic trends?
- 3) Are the objectives achieved in a durable and cost-effective way?

In the early 1990s, OECD Environment Ministers defined strategic orientations which are central to environmental performance analysis: the cost-effectiveness of environmental policies, the integration of environmental considerations into all other policies, and the effectiveness of cooperation with the international community.

A pragmatic approach was adopted requiring **environmental indicators** to be operational, and to correspond to three main criteria: policy relevance, analytically soundness and measurability. The first level of work done led to:

- a common terminology and a conceptual framework (the P-S-R);
- the development of an agreement on "core" indicators;
- the measurement and publication of indicators;
- their regular use in OECD analytical work and environmental performance reviews.

The *core set* of environmental indicators is applied to 13 major environmental issues of common concern in OECD countries, and provides a first mechanism to track environmental progress on them. *Sectoral indicators* have also been developed and used to integrate environmental concerns in sectors such as energy, transport and agriculture.

As regards the **use of indicators in the assessment of environmental performance**, it should be noted that :

- 1) indicators provide just one tool for evaluations and need to be supplemented by other qualitative and scientific information in order to avoid misinterpretation;
- 2) indicators must be reported and interpreted in the appropriate context, taking into account the ecological, geographical, social, economic and structural features of the countries;
- 3) as a consequence, the core set is to be complemented by country specific indicators;
- 4) although standardisation is needed to facilitate inter-country comparisons, there is no unique method of normalisation; when comparing indicators across countries, the outcome of assessment will depend on the chosen denominator (population, land area and so on) as well as on national definitions and measurement methodologies.

The review of trends, policies and countries' performances, as well as the use of peer pressure to improve them is a very basic OECD function. It was extended in the early 1990s to the environment, through the programme on **environmental performance reviews**. 20 environmental examinations have been carried out; in the Mediterranean, Spain and France have been completed, Turkey will be reviewed next year.

The aim of these reviews is to check whether domestic objectives and international commitments are actually translated into concrete actions, and which results are achieved. Each review addresses near 60 recommendations to the concerned Member country to help it consolidate achievements and further progress. Although OECD countries are bound together by a shared commitment to democratic ideals, pluralistic institutions and market-oriented economies, they also exhibit a wide diversity of physical, economic, social, cultural and environmental conditions that need to be taken into account when specifying these recommendations. For all countries, recommendations are made on the issues of air, water, waste management, integration of environmental and economic decision-making, and implementation of international commitments. In addition, special chapters and recommendations concern topics chosen according to the country-specific conditions, such as nature, agriculture, energy, transport, tourism, fisheries, forestry and the chemical industry.

EU/EEA experience

Mr. Ronan UHEL from the European Environment Agency (EEA) being absent, Mr. Thierry LAVOUX from the Institut Français de l'Environnement (IFEN) was invited to present the European experience, since IFEN is an active EEA focal point.

In the European Community, environmental policies are coordinated from 25 years now. There exist more than 200 European Directives and Regulations that have a binding character for the 15 member countries, and the question is whether they are implemented and whether the results are good. The Agency was created in 1993 with an explicit mandate to report on the state of the environment every three years as well as to ensure the broad dissemination of reliable environmental information.

Assessment for policy making needs to find the way of obtaining regular and updated understandings of how Europe's environment is changing and why, as well as the ways of putting this information to work at the European and country level. In this European strategy towards "integrated environmental assessment", the first steps are to evaluate the implementation of the 5th Environmental Action Programme defined in 1992, and to build on experience from the *Dobris assessment* published in 1995. Developing environmental scenarios

and policy options, developing policy relevant indicators, and harmonising/standardising approaches, are also part of the strategy.

The Agency has chosen the Driving forces-Pressures-State-Impact-Response (D-P-S-I-R) approach for developing indicators. According to the French experience, the D-P-S-I-R approach is complex to apply and necessary data for Impact indicators are lacking. However, the waste issue provides a good example of the interest of indicators developed for assessing policies performance. Although the assessment of the 5th Environmental Action Programme is on-going, indicators already show that the target set for 2000 in the waste field will not be achieved, that implemented waste policies are insufficient to reach that target, and therefore policies need to be reviewed.

As regards the question on how to implement indicators for Europe, key criteria are discipline (in order to avoid duplications and to agree on a package with member countries and other international organisations), continuity (to establish routine reporting), and « learning by doing ». The Agency works with countries having a long experience, for example, Denmark and the Netherlands, for improving the package.

Two types of reporting outputs are envisaged. The "Indicator report" is to be issued annually; it will focus on key issues which can be readily quantified; it is indicator-based aiming at simplification, quantification and communication, representing just a tool for raising awareness in the public opinion and media. The "State-of-the-environment report" will be published every 3 years, with the aim of telling the whole story (with details) on key issues; and including other issues which are hard or impossible to quantify.

During the **discussion**, several important points were raised, related *inter alia* to: the relationships to be made between environmental indicators and other sectoral, especially economic indicators; the linkages to be clarified between the Euro-Mediterranean statistical programme and Ministries of Environment work on indicators, as developing indicators requires a scientific approach to environmental issues; the relevance of indicators for policies since there are differences between good intentions and good policies, and between how to respect agreements and how to meet social and political needs. As regards the second point, it was precised that the Blue Plan makes efforts to build a bridge between Ministries of Environment and Statistical Institutes.

National experiences

France

Mr. Thierry LAVOUX (Institut Français de l'Environnement-IFEN) presented the recent French experience in developing environmental performance indicators. Generally speaking, IFEN's work appears to be more quantitative than the qualitative work carried out in OECD reviews.

As in several other countries, in France, few quantitative environmental targets have been clearly set at the political level, when the National Environment Plan was defined in 1990 for the decade to come. In order to provide a consistent overview of action undertaken if all environmental issues were to be dealt with, the **strategy adopted by IFEN** has been to identify, for each environmental issue, all the reference values that would enable to carry out an assessment of environmental policies in France. Reference values include national targets set as part of environmental policy if they exist, values included in international rules in which France has taken a commitment, or guidelines put forward by scientific experts.

An important work was carried out consisting of collecting and selecting reference values according to the specific *problématique* for each issue in France. For example, the European Directive on the quality of drinking water contains near 40 parameters, which means that 40 indicators would be needed; however, the application of the EU Directive in France has been adapted to the water quality specific issues in the country and, as a result, only 5 indicators (and parameters) are pertinent for this issue in France concerning mainly nitrates and pesticides used in agriculture.

The different logical steps of IFEN's work could be outlined as follows: « from the definition of each issue's *problématique* to the identification of objectives/goals and reference values », and « from these target-values to data ». The results have been published in the document entitled *Environmental Performance Indicators in France*. Eight areas are dealt with, each one having been divided into 31 key environmental issues in the form of Data sheets, the whole document presenting 92 indicators.

Two lessons can be learnt from this experience. Lacks in information systems concerning specific issues appear quickly; at the same time they can provide a *stimulus* for the agencies in charge of producing information. Addressed to decision-makers, the IFEN publication has been commented by the French press and thus appealed a larger audience, which can be useful for showing unperformances and the need to improve management. However, the role of IFEN is obviously not to point out what should be done. Decisions do pertain to the political level, but indicators can provide a very useful tool for establishing a dialogue among decision-makers, the scientific community, the media and the public.

Morocco

Mr. El Kebir ALAOUI (Observatoire National de l'Environnement du Maroc) presented the Moroccan strategy and experience on Environmental and Sustainable Development Indicators. Main objectives are to describe and measure the state of the environment according to technical, social and economic references; to follow up trends and make projections; to help decision-making and define quality objectives; and to evaluate strategies and policies performance.

A top-down approach was adopted. The National Strategy on Environment and Sustainable Development, which included an inventory of pollutions, led to the selection of environmental indicators for six main issues: water, air, solid waste, urban environment, soils and natural milieu, coastal areas. Moreover, the Strategy defines specific quality targets indicating quantitative levels (results) to be reached by 2005 and 2020.

The National Environmental Action Plan deepens sectoral analyses in the social (demography, health, education), economic (development issues in industrie, energie, transports, equipment, agriculture), ecological (ecosystems and natural resources), and management (institutions, legislation, financing) fields, for further integration and hierarchisation.

At the sub-national levels, regional monographies were prepared for the economic-region level that enabled to have inter-provincial visions. Finally, local monographies analyse local conditions and enable to evaluate and follow up actions in the field.

The methodology for developing indicators included first a reference comprehensive list which was then hierarchised according to cost-pertinence criteria, followed by a work of homogenisation among the national, regional and local levels, and requiring further adjustment and updating. Another step was to improve knowledge on the availability/existence of information, which implies an inventory work on existing data and information producers. An analysis of needs is then required so as to define which information should be produced. Once

these important points are clarified, a cooperation work can be launched with the statistical system in order to share for instance the same references in the GIS.

A participatory approach has been adopted all along the strategy. In order to facilitate the cooperation between the agencies concerned, a key issue has been making efforts to clearly explain its own approach to the others. In Morocco, significant progress has been made to share information among the Ministries of Environment, Agriculture and Public Works. Finally, it is important to note that the cost of studies can be very high. The cost analysis of the whole process is to be integrated.

Tunisia

Mr. Samir MEDDEB (Observatoire tunisien de l'environnement et du développement - OTED) presented the Tunisian programme on Sustainable development indicators which is being implemented progressively since two years now. Since the Earth Summit the international context is favourable, and in Tunisia, there is a political will for making progress towards sustainable development. Indicators are considered as important tools for evaluating gaps between fine words and actions.

Developing indicators makes part of the OTED's mission. In the process of elaborating sustainable development indicators, difficulties have appeared which relate to the mobilisation of stakeholders concerned, to the definition of a working frame for gathering the different actors, to communication gaps, and to the need to reach a consensus. The main current directions are to build on priority themes and to define a major frame.

National Thematic Indicators

Towards a common « core » set of National thematic indicators

Two intervenants from the Blue Plan for the Mediterranean introduced the smaller groups sessions. Ms. Silvia LARÍA reminded the major **functions of indicators** and made reference to the decision-making cycle. When developing and/or selecting indicators, it is necessary to keep in mind the major uses of indicators:

- to assess conditions and trends over time,
- to compare places and situations,
- to assess conditions and trends in relation to goals and targets,
- to provide early warning information,
- to anticipate future conditions and trends.

This workshop mainly focuses on the third of those functions, related to the distinction between *descriptive* indicators and *performance* indicators. Usually, goals and targets are national, set by the countries during the decision-making process, that is for instance during the elaboration of Sustainable development strategies or National Environmental Action Plans. And each stage of the **decision-making cycle** can be supported by indicators.

1. At the stage of problem identification and acknowledgement, when issues/problems requiring some kind of solution are to be defined, indicators can help to better grasp the issue. Once a problem/issue has been identified and defined, by the scientific community for example, it needs to be recognised as such in order that real efforts be done for solving it. Public awareness raising and participation are important here since many environmental issues are 'competing' with other urgent problems in society.

2. At the phase of policy formulation, when broad qualitative goals are set (i.e. to protect and extend the forest cover in a country), they need to be translated into quantitative targets to reach (i.e. to increase the forest area up to 25 % of the total land area), and associated if possible with a time schedule. Here, detailed information is needed, and defining specific indicators becomes part of the formulation of specific policies. Indicators can play an even more significant role when many policy options are examined and priority-setting takes place.

3. The stage of policy implementation is probably the most difficult and time-consuming phase of the whole decision-making cycle. It is the responsibility of implementing agencies at the appropriate national or local level. It requires a clear view of targets previously set and a continuous evaluation of progress done towards those targets. Flexibility is also needed for adjusting targets to changing situations.

4. Finally, at the stage of policy evaluation, indicators are absolutely necessary in order to find out if policies are working and if the needs will be met. A difference is to be made between assessing whether or not the formulated policies have been executed, and whether or not the original problem is really solved.

Ms. Domitille VALLÉE introduced the **two working papers** prepared by the Blue Plan for the group sessions. Both were sent to the national focal points in all Metap beneficiary countries by mid-november.

1. The first document is a Working paper - Draft for Discussion entitled « *Environmental Performance Indicators - National Thematic Indicators* ». It contains a menu of 110 indicators related to two Metap III priority fields: integrated water and coastal management, arresting and preventing pollution at hot spots. Since both fields are wide and complex, indicators refer to only four relevant issues:

- water resource management,
- water demand management,
- industrial pollution,
- waste management.

The indicators are ranged according to the P-S-R framework and detailed in tables. They are accompanied of examples of reference values that are currently used elsewhere in the world, at national and/or supranational (i.e. European) levels. Reference values were collected mainly in regulatory frameworks and international conventions.

2. The second paper is a *Questionnaire on National Thematic Indicators*, containing a narrower menu of 46 indicators for the four environmental issues already mentioned. Countries were requested to assess the relevance, feasibility and usefulness of this menu of indicators, as well as the availability of national targets for each indicator, as the purpose here is to refer to national targets and values actually adopted in the different Mediterranean countries.

Seven **answers to the questionnaire** were received before the workshop, from Albania, Croatia, Egypt, Lebanon, Morocco, Palestinian Authority, Turkey. Generally, the proposed indicators were felt relevant but their feasibility raised several difficulties to be discussed during the workshop.

Targets or reference values were rarely provided. When available, most targets or reference values concern health risks due to pollution, and relate to: quality control (concentrations in water, in air), emissions and pollutant discharges control, treatment systems efficiency. Unfortunately these are fields where data are not always regularly available and data collection would require costly monitoring systems. There are almost no environmental quantified targets or reference values cited on the use of natural resources (stocks and flows).

The **purpose** of the working group sessions on the four environmental issues is to complete and deepen this first picture on relevance and feasibility of the proposed menu of indicators. It is expected that a common « core » set of indicators for the Mediterranean be defined, which should remain open.

Working group sessions

Water resource management

Participants: 11 from Algeria, Croatia, Cyprus, Jordan, Lebanon, Morocco, Tunisia, Turkey.

Chairperson/Rapporteur: Ms. Selma GUVEN (Turkey).

Facilitator: Ms. Domitille VALLEE (Blue Plan).

Working method. The group worked on the basis of the small set of 10 indicators proposed in the questionnaire. Information on the first answers to the questionnaire (from seven countries) was provided. Since some gaps appeared in the short list, reference was made to the 31 indicators included in the Working paper.

The group gathered countries with very diverse water resource situations and discussed on the need to define what is at stake in water resource management. It was recognised that existing strategies must be taken into account for assessing performance and sustainability, and for selecting and interpreting indicators. The division among water resources management and water demands was not easy to respect as both aspects are closely related.

The P-S-R framework was used and the discussion focused on relevance, measurability and usefulness of the indicators to assess major water resources issues. Discussion on each indicator, especially on its definition and relevance was time consuming but proved to be useful in reaching a consensus. Availability of reference values was looked upon when possible.

Indicators methodological issues. The definition of indicators was not always sufficient.

A round table discussion helped to better assess the relevance and feasibility of indicators, which were not clear when countries were to fill the questionnaire. National situations can vary greatly as regards availability of information on a regular basis.

Very few responses to the questionnaire had provided information on availability of reference values and targets. From the discussion, it appeared that very few quantitative target-values are really available, and if available they are not used because there are no data.

All participants pointed out that reference values should be specific to each country according to its context. It was also felt that some indicators proposed were specific to sub-regional contexts and therefore were excluded from the common set.

It was recognised that group discussions were very useful to clarify methodological difficulties.

First results presented in the plenary session. As some important issues were not addressed in the proposed menu, new indicators were added (see Appendix 3).

During the plenary discussions, it was pointed out that some indicators are ambiguous and it was suggested to improve efforts in order to clarify definitions.

Water Demand management

Participants: 4 from Algeria, Lebanon and France; the other 5 participants belonging to international/regional organisations.

Chairperson/Rapporteur: Mr. Christian AVEROUS (OCDE)

Facilitator: Ms. Aline COMEAU (Blue Plan)

Working method. The discussion focused on the objective of a better water demand management rather than on the possible ways of new resource mobilization. This also includes the aspects of a better waste water treatment.

The group worked on the short list of 18 indicators preselected. For each indicator, relevance, soundness and feasibility were discussed.

Indicators methodological issues. A good part of the discussion was devoted to a better definition of the selected indicators. It was recognised that the terminology should be carefully established in the further phases of the programme.

It was considered that the indicator n° 5 on « measures to adapt and complete current water legislation » could not be elaborated because of the difficulty inherent to this kind of indicators. Similarly, a discussion took place in the group and in the plenary meeting, on the opportunity of having indicators on public awareness about water savings. One way could be to assess the public expenditures in order to increase this awareness, but this was not found relevant, because it does not allow to assess the efficiency of public actions.

Generally, the question of « institutional » indicators was considered to be a major issue which needs further development.

First results presented in the plenary session. The choice of indicators was slightly modified (for example add of an indicator on irrigated area/ arable area).

The group came out with a short validated list (see Appendix 3) of common indicators to be calculated in the countries.

During the plenary discussions, it was requested to add an indicator on the distribution system efficiency of each type of water use, and to express the total water demand per capita.

Industrial pollution

Participants: 7 from Algeria, Lebanon, Syria and Turkey; the other 3 participants belonged to international/regional organisations.

Chairperson/rapporteur: Ms. Abir ZENO (Syria).

Facilitator: Mr. Kirk HAMILTON (World Bank).

Working method. The results of the 7 responses to the Questionnaire were provided on a summary table but were not discussed. The group worked on the longer list of 24 indicators on industrial pollution included in the Working paper prepared by the Blue Plan.

Indicators methodological issues. The group recognised the need for a carefully defined terminology, building on existing definitions having a sound scientific baseline.

As regards relevance, it was pointed out the need to take into account country specific conditions; for instance "industrial zones" is not always applicable as some countries (Syria, Lebanon) have not yet defined them.

National targets are not applicable for indicators related to industrial production. For those related to pollution, they are generally not available except for emissions (CO₂, CH₄, CFC); reference values included in the Framework Convention on Climate change are relevant here.

First results presented in the plenary session. Out of the first list of 24 indicators, 5 were deleted (not relevant), 7 were added, and some others need to be clarified.

The group requested to integrate the results of the discussion (see Appendix 3) with the 7 answers to the Questionnaire so as to have a more complete picture for future workshops.

During the plenary discussions, it was argued that health impacts should be taken into account and appropriate indicators added.

Waste management

Participants: 10 from Lebanon, Jordan, Palestinian Authority, Syria, Egypt, Slovenia and Croatia; 1 from a regional organisation.

Chairperson/Rapporteur: Mr. Mazen SLEIMAN (Lebanon)

Facilitator: Mr. Jean-Pierre GIRAUD (Blue Plan).

Working method. The group worked on the basis of the small set of 10 indicators proposed in the questionnaire. The Working paper was also used since some gaps appear in the small list. The discussion on each proposed indicator referred to its P-S-R status, relevance and feasibility, and to reference values.

Since it was difficult to reach a consensus on every single indicator, a majority system was sometimes applied for making progress, but this led to a discussion on working group methods.

Indicators methodological issues. The discussion mainly focused on definitions of concepts and on the countries different situations.

The methodological criteria for selecting this very short menu of indicators was strongly discussed; however the interest of discussing on just a limited set of indicators was recognised since time was short. The same way of doing would be interesting to apply for the effective calculation of indicators.

The distinction between the different types of indicators : pressure, state, response indicators, was considered difficult to apply.

Another difficulty concerned feasibility, as there are very different country situations.

Time was too limited to finalise the work.

First results presented in the plenary session. A minimum set of 13 indicators was selected, the definition of 4 indicators was adapted, and 3 indicators were added (see Appendix 3).

Project Indicators

Methodological framework

Mr. Kirk HAMILTON (World Bank) presented an experimental methodological framework for developing **performance indicators for environmental projects**.

The framework makes part of a WB-wide effort to develop performance indicators for projects in all sectors. Reference is made to a document distributed during this workshop entitled "Performance Indicators for Environmental Projects" which reflects the latest thinking on the matter.

It is assumed that the usual indicators for project management relating to inputs, outputs and risks are generic, applicable to any project. That is why emphasis is given here to specifically **environmental aspects** of the projects in question. Environmental projects span a very wide range, including institutional development, water supply and sanitation, natural resource management, protected areas, pollution control, waste management, and so on.

Just as project activities have a hierarchy, ranging from project to sub-project to component, it is possible to build a hierarchy of performance indicators for environmental projects. The suggested framework attempts to combine 'macro-level' and 'micro-level' indicators.

Three broad levels of indicators seem useful for tracking project performance:

- At the **project level**, progress towards project overall objectives needs to be tracked. This requires measuring both the changing *state* of the environment (the ultimate outcome of the project) and the changing *pressures* placed on the environment by human activities (the proximate effects of the project).
- At the **sub-project and component level**, more specific indicators are required in order to track progress. Sub-projects are designed to have particular *impacts*, which can be tracked using indicators; they are made up of individual components, each with their specific *outputs* and/or *outcomes* which combine in complex ways to produce the desired *impacts* that may be tracked using indicators.
- At the **project level again**, *linkages* to the world beyond the project are important in project design and implementation, as well as the *multiplier effects* that can be expected from project implementation.

The OECD Pressure-State-Response indicator framework can be used and adapted for the project level. The main difference between the framework adapted and the standard P-S-R is that the project itself represents the response to environmental deterioration. The project typically alters human activities, but may have a direct impact on the environment itself (as in the case of an environmental rehabilitation project, for example).

For the working group sessions, 'skeleton' tables were provided as a guide to the exercise. In each case (with the exception of linkages and multiplier effects), it was suggested that current values of the indicator, and milestones and target values be measured, so as to track progress towards intermediate goals (milestones) and final targets, even if sometimes there are no quantifiable goals or milestones for the project and its components.

- At the project level, it was suggested to focus on its overall objectives. A project aims to alter or reduce *pressures* on the environment. As a result, the *state* of environmental media and human health should improve over time.
- Sub-projects can be monitored both in terms of: a) *impact* indicators for tracking progress towards the objective of the individual sub-project; b) component *output/outcome* indicators that lead to these impacts.

The exercise on project indicators was carried out in working group sessions. Case studies selected for the exercise of application on 4 World Bank already implemented or under implementation projects in 4 Metap countries, were as follows:

- water sanitation management (from an Albanian case)
- industrial pollution (from an Algerian case)
- waste management (from a Lebanese case)
- institutional building in environmental management (from a Moroccan case).

Working group exercises

Water sanitation management (from an Albanian case)

Chairperson/Rapporteur: Mr. B. JABER (Lebanon)

Facilitator: Ms. D. VALLEE (Blue Plan)

Participants: 9 from Albania, Egypt, Lebanon, Jordan, France, Croatia.

Presentation of the case study. The participants received a short note presenting the "Albania Durres water supply rehabilitation project", prepared by the Blue Plan. A detailed document had also been prepared by the two Albanese participants.

Mr. A. Cullaj (Albania) presented an overall picture of the drinking and sanitation sector in his country. Ms. Vallée described the project itself with its different sub-components, and explained the aim of the exercise.

Working method. At the project level, focus was made on identifying indicators useful to characterise the environmental pressures and the health and environmental situation to be improved by the project. For devising sub-projects indicators, emphasis was put on indicators of *impacts* in order to really assess environmental performance and avoid duplication with a traditional project evaluation. As regards the identification of targets and reference values for the project, in the Albanese project, a number of targets were proposed for sub-components and linked to specific indicators.

Discussion. Several methodological difficulties arose, mainly related to the identification and distinction between pressure and state indicators. Their definition was not clear for some participants. Clearer definitions were needed as well as concrete examples to work.

The participants preferred to focus on identifying the specific goal of projects sub-components and the indicators able to assess performance in reaching this goal.

The methodology proposed was felt difficult to apply especially the distinction among outputs, inputs, impacts, linkages, multiplier effects.

Participants were extremely cautious in adding value to a traditional project evaluation work. Environmental performance evaluation requires getting away from the mechanics of projects evaluation with the classic inputs, outputs, and so on. In any case, the latter are usually assessed by a project manager.

Time was too short to finalise the work as half was consumed in intensive but useful methodological debate.

Group conclusions and plenary discussion. The group concluded that the most useful indicators are indicators of *impacts*. But to be feasible, they are dependant on outcomes of the project such as the setting and maintenance of good monitoring systems in the supply, distribution, sanitation sectors. For the results presented, see Appendix 4.

Industrial pollution (from an Algerian case)

Chairperson/Rapporteur: Mr. H. CHALAL (Algeria)

Facilitator: Mr. K. HAMILTON (World Bank)

Participants: 7 from Algeria, Lebanon, Palestinian Authority, Syria, Turkey; 2 from regional organisations.

Presentation of the case study. The participants received a brief note on the « Algeria Industrial Pollution Control Project » indicating the objectives of the project and describing the two main sub-projects: strengthening the institutional and legal framework, pilot investments.

Working method. It was the same as for the former case.

In doing the exercise, the group understood the difference between the national thematic indicators and the performance project indicators.

Discussion. An interesting discussion took place on the feasibility and opportunity of undertaking a health survey at the project level (difficulties to carry out this kind of survey and to assess the long term effects of pollutions,...). A first answer to this question could be to rely on the WHO's recommendations in terms of pollutant concentrations (state indicators).

Group conclusions and plenary discussion. Plentiful indicators were proposed for the two sub-projects: institutional strengthening and investments (see Appendix 4).

In the plenary discussion, it was suggested to distinguish between institutional building and capacity building issues.

Waste management (from a Lebanese case)

Chairman/Rapporteur: Mr. M. SLEIMAN (Lebanon)

Facilitator: Mr. J.P. GIRAUD (Blue Plan).

Participants: 7 from Lebanon, Jordan, Syria, Algeria and Cyprus; 2 from international/regional organisations.

Presentation of the case study. Mr. Giraud presented the project itself making reference to the short note on the « Solid waste/environmental management project» for the Lebanese Republic.

Working method. The aim of the exercise was to identify: indicators useful to characterise the project, separating the environmental pressures and the state of the environment; project components objectives and related indicators, focusing on outcomes indicators for each component: collection equipment, disposal and treatment facilities, medical waste and technical assistance; and current values and targets to reach for each indicator at the project and components levels.

Discussion. This project concerned the whole country. Most of the discussion related to the waste management overall situation in Lebanon, the situation in the other countries being very different especially in Egypt.

The discussion on cost recovery of solid waste management was very interesting, pointing out the problem of an efficient cost recovery in almost all Mediterranean countries. The relative weakness of the municipalities and the poverty of the population are the main constraints.

Main methodological difficulties concerned the distinction among the different types of indicators: pressure and state indicators, and outputs, outcomes, inputs, impacts, linkages, multiplier effects. Their definition was unclear for some participants.

Group conclusions and plenary discussion. Time was too short to finalise the work as half was consumed in intensive but useful methodological debate. See Appendix 4 for the conclusions.

Institutional building in environmental management (from a Moroccan case)

Chairperson/Rapporteur: Mr. E.K.M. ALAOUI (Morocco)

Facilitator: Ms. S. LARIA (Blue Plan)

Participants: 10 from Lebanon, Croatia, Morocco, Algeria, Tunisia, Turkey, Slovenia; 3 from international/regional organisations.

Presentation of the case study. A background note on the project on "Environmental management in Morocco", prepared by the Blue Plan, was distributed to the participants.

Ms. Laría described the project itself, the general context and overall objectives. The six sub-projects were just evoked. Mr. Alaoui completed the presentation and explained recent changes of the Moroccan institutional context in the environmental field.

Working method. The participants were invited to «take off», go beyond the Moroccan situation and context, and take the project just as a case study for exercising in environmental performance indicators, following the methodological framework proposed by Mr. Hamilton.

Discussion. The description of the project was time consuming: the 'project' is very complex consisting of strengthening a nation-wide institutional and regulatory framework for managing environmental protection, and involving the participation of several actors/agencies. Moreover, six 'sub-projects', each of them being also complex, make part of the project.

The group was large and heterogeneous. Since going through the whole project would have taken many hours, it was decided to limit the discussion only to the first sub-project (strengthening the technical and administrative capacity) in order to exercise on performance indicators.

Several methodological difficulties came out. At the project level, it was argued that the ultimate effects (impacts) of this kind of project could not be measured in the short or medium term. Even in the long term, the links between institutional capacities and the state of the environment are not mechanical; the causal link is not obvious at all.

At the sub-project level, it took time to agree on the specific goals ('to operate a coordinated environmental management between three agencies, and a decentralized management at the local level'). Proposals of indicators to measure progress towards those goals were plentiful, some of them endowed with fantasy (number of common decisions taken by the 3 agencies in a year, number of telephone conversations between the 3 Ministries). But the group felt uncomfortable and "frustrated" in making efforts to quantify what is seldom quantifiable.

Generally, the methodology was felt inadequate for projects in the institutional field, where distinctions between *efforts* and *results*, between *administrative* performance and *environmental* performance are not obvious. Even if the group recognised the importance of Expenditures for measuring efforts, this indicator was felt as inappropriate to show efficiency of policy implementation.

Group conclusions and plenary discussion. In the plenary session, the rapporteur made a synthesis of the group discussion and presented the few results obtained (three types of indicators). Since methodological difficulties in the institutional field should be tackled with other bases and tools, it was suggested to put the work in hand (to open a "*chantier*") for the future.

Indicators and decision-making

A **Panel discussion** on the "Use of indicators and their impact on decision-making and public opinion" was chaired by Mr. Christian AVEROUS (OECD), and gathered Ms. L. CHAMAS (Lebanon), Mr. E.K.M. ALAOUÏ (Morocco), Mr. M.S. AL HMAÏDI (Palestinian Authority), and Mr. K. HAMILTON (World Bank).

Environmental performance indicators are an important **tool for decision-making**. They can help in preparing and following-up the decisions, as well as in measuring the environmental results of actions carried out. They can also contribute to better decisions by helping to a better definition of the desired objectives and by measuring the degree of achievement of those objectives. They can be used for decision-making at several levels.

Indicators can concern decisions at the **national level**. In Morocco, the indicator on the cost of environmental degradation (8 % of the GDP) has raised a stronger awareness on the importance of pollution abatement and sound natural resources management. Other less aggregated indicators have contributed to a specification of goals as well as to a better positioning of the country in international negotiations. Indicators are needed to support national environmental

planning and programming. For making progress in developing indicators, learning by doing is the best way to avoid delayed action in the name of information gaps and/or perfectionism. The "chantier" of indicators is open to all, and concerns most actors. Synthetic and quantitative indicators can contribute to the dialogue among ministries, with the parliaments, with the media and the private sector. As regards the latter, the standard ISO 14000 should contribute to a better environmental management of enterprises.

At the **project level**, it is important to have indicators at an early stage in designing projects, for identifying the needs and the outcomes expected, and for monitoring progress towards them. They can thus contribute to a better definition of project objectives which are not always clear (case of capacity building projects with very broad objectives), or to avoid misunderstandings between donors and beneficiaries (case of incinerators transferred to a country with instructions in the donor's language). Indicators could yet have a larger impact if countries become the owners of the projects.

Indicators can also concern decisions on **international** scope issues. International agreements and conventions can rely on quantified physical and economic analyses; their implementation will thus be monitored using the same measures. An example is given by the climate change convention. Indicators developed by the World Bank (sustainable development indicators for measuring the wealth of nations) or by the OECD (environmental indicators) have a demonstration value and show the importance of certain parameters. They can also contribute to raise awareness on the relative position of a country within a given context. Lessons can be taken from these or other experiences.

As regards indicators and the **public opinion**, it might be said that the best ally of an environmental administration is the public opinion. Difficult decisions can sometimes be taken thanks to the support provided by information, sensibilisation and consultation activities (i.e. debate on incinerating solid waste in Beirut). However, information addressed to the public opinion and to the media must be carefully prepared. Quantification and simplification are certainly required, but what is also needed here is some kind of teaching skills (a *pedagogical* effort). Clear explanations must accompany indicators in order to facilitate good interpretation.

In conclusion, environmental performance indicators are useful and feasible, but need to be analysed and interpreted with caution, according to specific contexts that can vary greatly from the administrative, institutional, social, economic, and environmental points of view. Indicators can also contribute to a democratic debate on environmental issues.

Networking

Proposal for networking. Mr. Jean-Pierre GIRAUD (Blue Plan) intervened on the interest of setting-up a Mediterranean network on Environmental Performance Indicators. The network would have the following objectives:

- to contribute to the elaboration of a common set of Environmental Performance Indicators for the Mediterranean countries,
- to make available existing information on indicators and methodologies,
- to improve exchange of information and experience among the partners.

The network would be Internet-based and make part of an overall Metap web site as well as part of a MAP web site. It could link the international agencies working on indicators, and the institutions concerned at the national and local levels. The information gathered would be available to the different partners.

A prototype of the web site was described. The web pages could focus on Environmental Performance Indicators and contain details on framework and definitions, methodology, indicators sheets, international and national initiatives (with links if possible), the first common « core » set of Mediterranean indicators, and examples with national targets and/or reference values. A list of the Mediterranean network partners will complete the picture. The well functioning of this tool will rely on the improved utilisation of the electronic mail among partners.

Mr. George AKL (UNDP-SDNP Lebanon) presented the **example** of the Sustainable Development Networking Programme and the relationships between this network and a national *Observatoire*. Conceived as a support to sustainable human development, SDNP main objectives are to provide access to and disseminate information, to integrate sources (by networking), and to coordinate and share knowledge/resources. In a SDNP network all members are information users and providers. In Lebanon for instance, the network members are besides UNDP, the Government institutions/agencies, academia, environmental and other NGOs, and private stakeholders. The SDNP network can be an essential supporting tool for an *Observatoire de l'environnement* while this one can add value to SDNP, by producing information for decision makers concerned with environment and sustainable development. Within this frame, information systems in the concerned sectors are to be reinforced and procedures for the exchange of electronic data (related for instance to indicators and statistical data) are to be established.

During the discussion, the most important points raised concerned the problem of data availability and quality, as well as the need of exchanging experience more than electronic data.

Follow up actions

Mr. Arab HOBALLAH (Blue Plan) presented the different activities envisaged for the follow-up of the programme. They mainly consist of:

1. The indicators lists that have come out from the working group sessions will be reviewed and submitted to the different Workshop participants.
2. A « Methodological Note » will be prepared on the basis of the background documents discussed during this workshop, reviewed and improved according to the different suggestions:
 - methodological difficulties/issues will be tackled concerning indicators at the national level and at the project level;
 - examples of Indicators sheets (according to the ONU/CSD guidelines) will be included.
3. The common « core » set of indicators should be sharpened during the next sub-regional workshops. In order to assess environmental performance, national targets set by the countries and reference values adopted by them, should be added and better defined.
4. Since institutional issues have been recognised as important but requiring a specific approach, a « chantier » on institutional and capacity building indicators could be opened in cooperation with the UNDP-Capacity 21 Programme.
5. A « Progress report » will be prepared and disseminated, on a 4-month basis. It will include two types of information:
 - information on Indicators (usefulness, adaptation, reference sources);
 - information on Activities.

The next sub-regional workshops (certainly 2, probably 3) will take place during 1998, one in a Maghreb country, another one in a Machrek and/or an Adriatic country. The purpose of these workshops is to share experience and to provide technical assistance at the regional level, but the work is to be improved and deepened in the countries, by the persons concerned.

4. Workshop Evaluation

Before the workshop adjourned, participants completed a workshop evaluation form (see Appendix 5 for full results). Most participants thought that the **workshop objectives** had been achieved concerning the review of conceptual frameworks and the link between indicators and decision-making. Objectives concerning the development of capacity on National thematic indicators and on Project indicators were considered moderately achieved.

The **major benefits** identified by the 28 respondents concerned mainly the exchange of experience between the participants, the transfer of international experience on indicators (OECD, etc.), and a better understanding of indicators concepts and use.

Activities that could have been better done during the workshop refer to:

- a better overview of the process (in national contexts and within Metap); objectives and working programme to be clearer;
- to make a clear distinction between sustainable development indicators and environmental indicators;
- more guidelines for project indicators: the exercise was formulated in a complicated manner, and the framework was felt as rigid, thus limiting brainstorming in working groups;
- working group sessions were short;
- earlier distribution of background material.

What was missing

- a presentation by each Metap country on its own situation and experience;
- an overview of indicators currently being developed concerning other important issues for the countries, such as desertification, air pollution...
- a clear definition of the indicators proposed for the national level;
- clear methodological guidelines for developing/calculating environmental indicators and environmental performance indicators.

Unsolved issues

- Metap priorities;
- precise definitions of indicators;
- data gaps and collection, as well as linkages with statistical data;
- environmental performance indicators on institutional and capacity building issues;
- how to work together.

Suggestions

« Framework of indicators in general (it is the task for further workshops). Harmonisation inter countries. Important feature of indicators is comparabilities. Different conditions among countries. Guide from Blue Plan asking countries to evaluate indicators regarding the country condition. Unsolved is the core set of indicators. »

« More time for discussion mainly on the different national contexts and constraints. »

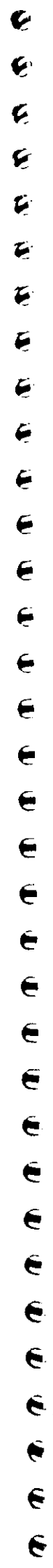
« A session should have been dedicated to the difficulties encountered by the countries in working on indicators. This is an important learning tool. »

« More participation / Less lectures / Need synthesis for working groups => prerequisite to achieve the objective of working together. »

« We should end series of sub-regional workshops with an integrated workshop where all parties can share their notes and agree on a unified methodology for developing indicators. »

Appendix:

- 1. List of participants*
- 2. Workshop Agenda*
- 3. Results of Working Groups on National thematic indicators*
- 4. Results of Working Groups on Project indicators*
- 5. Results of Workshop evaluation*
- 6. List of Documents*



Appendix 1

List of Participants

BENEFICIARY COUNTRIES

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Appendix 2

Agenda



METAP

METAP-MAP/Blue Plan

International Workshop on "Environmental Performance Indicators"

Beirut, 15-17 December 1997

- Agenda -



MAP/BP-RAC

Monday 15		Tuesday 16		Wednesday 17	
<p>9h30 H.E. The Minister of Environment UNDP Beirut METAP MAP/Blue Plan</p> <p>Objectives and organisation of the Workshop Presentation of the Participants/Round Table Mediterranean context for the development of Indicators</p>	<p>S1 - Opening and Introduction</p>	<p>9h00 Presentation and discussion, about 15 minutes per group Project environmental performance indicators Organisation of Working Groups and tasks</p>	<p>S5 - Wrap-up from break-out session</p>	<p>8h30 Networking : international, regional, national On going experiences: UNDP/SDNP Agenda for further activities and assistance to countries Next sub-regional workshops, inputs and venue</p>	<p>S9 - Networking and follow up programme</p>
<p>10h30 - Coffee Break</p>	<p>10h30 - Coffee Break</p>	<p>10h30 - Coffee Break</p>	<p>10h30 - Coffee Break</p>	<p>9h45 - Coffee Break</p>	<p>9h45 - Coffee Break</p>
<p>11h00 Conceptual framework and lessons from experience Environment performance review: - OECD experience - EU/EEA experience</p>	<p>S2 - Conceptual framework and lessons from experience</p>	<p>11h00 Four(4) working groups of about 12 persons each on: - Water sanitation management (from an Albanian case) - Industrial pollution (from an Algerian case) - Waste management (from a Lebanese case) - Capacity building in management of environment (from a Moroccan case)</p>	<p>S6 - Break-out session on Project Indicators</p>	<p>10h15-11h15 Evaluation of the workshop Closing remarks</p>	<p>S10 - Conclusions</p>
<p>13h00 - Lunch</p>	<p>13h00 - Lunch</p>	<p>13h00 - Lunch</p>	<p>13h00 - Lunch</p>	<p>11h45 - Departure guided visit</p>	<p>11h45 - Departure guided visit</p>
<p>14h30 S3 - Lessons from experience (cont'd), Statistics and Indicators A European exercise: France/IFEN • Southern • exercises: Morocco and Tunisia National thematic Indicators, set of indicators and questionnaire Organisation of Working Groups and tasks</p>	<p>S7 - Lessons from experience (cont'd), Statistics and Indicators</p>	<p>14h30 Presentation and discussion, about 15 minutes per group</p>	<p>S7 - Wrap-up from break-out session</p>	<p>Guided visit to the historic site of Baalbeck</p>	
<p>16h00 - Coffee Break</p>	<p>16h00 - Coffee Break</p>	<p>16h30-18h00 Use of indicators and impact on public opinion, civil society and decision-making Panel discussion</p>	<p>16h00 - Coffee Break</p>		
<p>16h30-18h30 S4 - Break-out session on Thematic National Indicators Four(4) working groups of about 12 persons each on: - Water resource management - Water demand management - Industrial pollution - Waste management</p>	<p>S8 - Break-out session on Thematic National Indicators</p>	<p>Dinner offered by the Lebanese Ministry of Environment</p>	<p>S8 - Indicators and decision-making</p>		



UNOPS



Ministry of Environment
REPUBLIC OF LEBANON





METAP-MAP/Blue Plan
International Workshop on « Environmental Performance Indicators »
Beirut, 15-17 December 1997

Tracking Workshop Progress

The major objectives of the Programme Performance Monitoring Indicators/PPM are:

1. to help countries monitor progress in achieving their environmental objectives in regard to their national and international commitments and
2. to provide the incentives and impetus for the countries to ultimately build and own an efficient observation, monitoring and evaluation system

and this through a series of steps that will consist, for this workshop, in :

- reviewing and updating the indicators conceptual framework and methodologies;
- clarifying the relation between indicators and decision-making, and exchanging on the role of indicators in the decision-making process;
- developing capacity in identification, elaboration and use of thematic national and project performance indicators;
- deciding and agreeing on follow-up activities at regional, national and project levels.

Agenda

Monday 15

9.30 - 10.30

S1 Opening and Introduction

Hosting Country, H.E. The Minister of Environment,
UNDP/Beirut., (on behalf of Ross MOUNTAIN)
METAP
MAP/Blue Plan,
Indicators, decision making and sustainable development

Akram CHEHAYEB
Rashid AYADI
Ch. CAREAGA
Arab HOBALLAH

Presentation of the Participants/Round Table
Objective and Organisation of the Workshop
Mediterranean context for the development of indicators

Arab HOBALLAH
Arab HOBALLAH

Coffee Break

11.00 - 13.00

S2 Conceptual Framework and lessons from experience

Conceptual framework and methodologies for the indicators Kirk HAMILTON
Overview of work related to ISD and EPI

Environment performance
OECD experience Christian AVEROUS
EEA experience (on behalf of Ronan UHEL) Thierry LAVOUX

Lunch

14.30 - 16.00

S3 Lessons from experience and introduction to breakout sessions

A european exercise: France/Ifen, Thierry LAVOUX
Recent experience on EPI, process, output, impact

« Southern » exercises, Morocco El Kebir ALAOUI
 Tunisia Samir MEDDEB
Review of process towards identification and elaboration of indicators

National thematic indicators, Silvia LARIA
set of indicators and questionnaire D. VALLEE
Introduction of the working paper on national thematic indicators
selection of proposed set of indicators, purpose and structure of questionnaire

Organisation of Working Groups and tasks Arab HOBALLAH

Coffee Break

16.30 - 18.30

S4 Break-out sessions on Thematic National Indicators

Four(4) working groups of about 12 persons each on:
Water resource management
Water demand management
Industrial pollution
Waste management

For each group, were designated a chairman/rapporteur, an animator/flipcharter and a notetaker ; introduction by the animator(issue context and indicators)

Tuesday 16

9.00 - 10.30

S5

Wrap-up from break-out sessions and introduction to next Working Groups

Presentation and discussion, about 15 minutes per group

Rapporteurs
Kirk HAMILTON
Arab HOBALLAH

Coffee Break

11.00 - 13.00

S6

Break-out sessions on Project Indicators

Four(4) working groups of about 12 persons each on:

Water sanitation management (from an Albanian case)

Industrial pollution (from an Algerian case)

Waste management (from a Lebanese case)

Capacity building in management of environment (from a Moroccan case)

For each group, were designated a chairman/rapporteur, an animator/flipcharter and a notetaker; introduction by the animator(summary of case and project indicators framework)

Lunch

14.30 - 16.00

S7

Wrap-up from break-out sessions

Presentation and discussion, about 15 minutes per group

Rapporteurs

Coffee Break

16.45 - 18.00

S8

Indicators and decision-making

Use of indicators and impact on public opinion, civil society and decision-making

Dinner offered by the Lebanese Ministry of Environment

Wednesday 17

8.30 - 9.45

S9

Networking and follow up programme

Networking : international, regional, national: Blue Plan

On-going experiences : UNDP/SDNP

Agenda for further activities and

Next sub-regional workshops, inputs and venue

J.P. GIRAUD
Georges AKL
Arab HOBALLAH

Coffee Break

10.15 - 11.15

S10

Conclusions

Evaluation of the workshop

Evaluation forms filled in plenary

Closing remarks

METAP

MAP/BP

MAP/Blue Plan

Ministry of Environment

Tehmina AKHTAR
Lucien CHABASON
Arab HOBALLAH
Mounir BU GHANEM

Adjourn meeting

11.45

Departure for a guided visit to the historic site of Baalbeck

S 4
Working Groups Tasks

Thematic National Indicators

Subject	Chairperson/ Rapporteur	Animator/ Flipcharter	Note-Taker	Language
<i>WG-2-1 Water Ressources Management</i>	S. Güven	D. Vallée		EN/FR Translat°
<i>WG-2-2 Water Demand Management</i>	Ch. Averous	A. Comeau	S. Medhi	EN/FR
<i>WG-2-3 Industrial Pollution</i>	A. Zeno	K. Hamilton	S. Laria	EN
<i>WG-2-4 Waste Management</i>	M. Sleiman	J.P. Giraud	M. Boussraoui	EN

Tasks

Taking into account the working paper on national thematic indicators and related questionnaire, together with the indicators framework, participants to the groups are requested to :

- review the relevance of proposed indicators to national strategies and priorities ;
- review their effective feasibility and necessary inputs (partners, data and information required) ;
- discuss their importance in related sector's strategy ;
- identify relevant national targets, reference values and legislation ;
- propose a limited set of common indicators for further elaboration, calculation and presentation, keeping in mind that this set will then be completed by more specific national indicators ;
- present the results at the plenary session for exchange, discussion and broader consensus.

S 6
Working Groups Tasks

Project Indicators

Subject	Chairperson/ Rapporteur	Animator/ Flipcharter	Note-Taker	Language
<i>WG-1-1 Water Sanitation</i>	B. Jaber	D. Vallée	N. Chahinian	EN
<i>WG-1-2 Industrial Pollution</i>	H. Chalal	K. Hamilton	A. Comeau	EN
<i>WG-1-3 Waste Management</i>	M. Sleiman	J.P. Giraud	G. Akl	EN/FR
<i>WG-1-4 Capacity Building</i>	E.K.M. Alaoui	S. Laria	H. Fakhoury	EN/FR

Tasks

Taking into account the project indicators framework and the brief description of the project to be made by the animator and the chairman and to be used as a practical case, participants to the groups are requested to :

- play the role of the project manager and question themselves on how to reach the objectives, through, inter alia :
 - what information is needed for better management ?
 - how to measure environmental performance ?
 - how to assess impacts, linkages and multiplier effects ?
- apply the PSR framework to identify a set of project level indicators;
- identify sets of sub-project level indicators ;
- identify, where applicable, targets in order to further measure performance ;
- present the results at the plenary session for exchange, discussion and broader consensus.

Appendix 3

Results of Working Groups

on

National Thematic Indicators

NATIONAL THEMATIC INDICATORS

Monday 15 December 1997

Water Resources S. GUVEN (Turkey)	Water Demand C. AVEROUS (OECD)	Industrial Pollution A. ZENO (Syria)	Waste Management M. SLEIMAN (Lebanon)
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M. BOLATA (Morocco)	T. LAVOUX (France)	T. AKHTAR (METAP-RPCB)	H. BEHAIRY (Egypt)
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NATIONAL THEMATIC INDICATORS - WATER RESOURCES MANAGEMENT

Working Group N° 1

Broad aims under this subject

- sustain and improve state of the natural water resources
- save water resources and diversify water supply sources
- implement integrated management involving participation of all actors and users

Strategic objective :

- define and implement integrated planning of water resources and demands management at the relevant levels

It sets major management objectives, together with planning horizon, scenarios and investments. Therefore it can provide in a given national context perspectives in the short, medium and long term and when possible proposes quantified objectives. It seems a good reference frame for the core set of indicators presented after

Preliminary requirements for the use of indicators : context setting with three major types of information

1. existence and level of implementation of a blue print law or a water code for integrated water management
2. existence and implementation of planning in the short to the long term
3. existence and development of the system of information on water (definition, fields of information covered by the data, methods of data collection, statistical infrastructure)
4. knowledge of the natural context using the descriptive indicator : annual average of natural water per inhabitant

Choice of the set of performance indicators :

Assess the relevance, feasibility and usefulness of this set of indicators to assess major water resources issues

1. reference to the pressure-state-response framework

2. criteria to select data

Relevance :

- policy relevance
- analytical soundness : indicators should be well founded in technical and scientific terms

Preference was given to indicators that can be influenced by human actions.

Feasibility : measurability

First set of Water resources management indicators

Strategic objective : integrated water resources and demands planning

Summary tables

<i>Issues</i>	<i>Pressure</i>	<i>State</i>	<i>Response</i>
tension on natural resources	index of exploitation of water resources	annual exploitable resources per inhabitant	Rate of forest coverage of wetland areas (%)
		areas covered by wetlands / total area	wetlands areas designated as ramsar site /total wetlands
risk of degradation and depletion	Over-exploitation index of groundwater	indicator of water quality : Concentrations in groundwater and in surface waters, conformity with standards :	Index of supply diversification = total supply / demands
limit of water development	Indicator of loss of storage capacity of dams due to stilting = current annual storage capacity of dams / maximum potential storing capacity withy dams (total development)		index of dam exhaustion = annual existing water storage in dams / maximum potential storing capacity with dams (total development)

Feasibility and Relevance of Indicators set

Feasibility	Relevance	PSR	<i>Indicator set for water resources</i>
			Water resources conservation status
LT	R	S	1. annual exploitable resources per inhabitant (technical, economical, social, and ecological criteria used to be defined)
LT	R	S	2. indicator of water quality : Concentration in groundwater and in surface waters compared to standards of :'-salinity- nitrates- pesticides- oxidisable matters The objective of water quality conservation and the relevant standards are to be defined first in as they can be very diverse and they are very dependant on data availability.
A to LT	R	S	3. areas covered by wetlands / total area
A to LT	R	R	4. wetlands areas designated as Ramsar site /total wetlands These two indicators are relevant in countries where there is an objective of conservation of humid areas. To assess performance of conservation actions specific local indicators should be added.
			Water management strategies : pressures and responses
ST-MT	R	P	5. Index of exploitation = Annual withdrawals (all uses) / annual average resource
ST-LT	R	P	6. Over-exploitation index of groundwater especially for country where groundwater represent a main source of water. Very dependant on the availability of data.
		R	9. Index of supply diversification (show that supply increase) = -demands covered with desalinisation and waste water treatment / total demands -supply (natural resources+ other sources) / demands
MT	R	S	11.indicators of stiling of dams = current annual storage capacity of dams / primary useful capacity of storage of dams
MT	R	R	12.index of exhaustion of dam sites = current capacity of storage in dams / maximum potential storing capacity with dams (total development)

Exemple of Reference values

<i>Reference values</i>	<i>Indicator set for water resources</i>
according to national planning documents	Water resources conservation status
(national criteria of exploitability of water resources to be set)	1. annual exploitable resources per inhabitant
national water quality standards according to objective of monitoring	2. Concentration in groundwater and in surface waters compared to standards of :'-salinity- nitrates- pesticides- oxidisable matters
	3. areas covered by wetlands / total area
Ramsar convention	4. wetlands areas designated as Ramsar site /total wetlands
according to national planning documents	Water management strategies
	5. Annual withdrawals (all uses) / annual average resource
	6. Index of supply diversification

NATIONAL THEMATIC INDICATORS - WATER DEMAND MANAGEMENT
Working Group N° 2

	Water demand specificities
P	1. Total water demand: a) withdrawal b) consumption
P	2. Share of water withdrawal by sector (public supply, self supplied industry, agriculture, others)
R	3. Share of sectoral water use (agriculture, industry) covered by treated waste water
S	4. Share of non compliance of drinking water by quality class
	Frame of water demand management
R	5. Regulatory measures to limit water withdrawals and to prevent pollution
R	6. Use of economic instruments: a) water prices - for drinking water - for irrigation water b) existence of water charges related to water withdrawals or water pollution
	Drinking water demand and sanitation
P	7. % of population with access to drinking water (rural/urban; direct or other access)
P	8. Volume of drinking water paid for, as a % of drinking water produced
R	9. Share of the population with access to sanitation a) without on-site treatment nor connection to sewerage b) with on-site treatment c) connected to sewerage without treatment d) connected to sewerage and with treatment - with primary treatment - with, at least, secondary treatment
	Self supplied industry
P	11. Industrial withdrawals by branches
P	12. Industrial discharges into water: % of unit with pretreatment by branches and size of industries (large, medium, small)
	Agriculture
P	12 bis. Irrigated area as a % of total cultivated area
P	13. Agricultural water demand per irrigated area, by crop
P	14. Indicators of risk of water pollution by agro-chemicals - commercial N fertilizers per ha of cultivated area - pesticides: tons of active ingredients used per ha of cultivated areas
P	16. Share of the areas irrigated by type of irrigation: surface/sprinkler/micro-irrigation

For all indicators, reference values should be primarily set at national level



NATIONAL THEMATIC INDICATORS - INDUSTRIAL POLLUTION
Working group N° 3

Industrial pollution indicators

Type PSR	Indicator	Relevance	Feasibility	Targets and reference values	Comments
P	GDP industrial sector / Total GDP	R	Available	Not applicable	It is a base indicator
P	Index of industrial production (general and by sector) - Mines and quarrying - Cementeries - Iron and steel industry - Chemical industry (particularly phosphates) - Oil refineries - Tanneries - Agro-food (Olive oil) - Textile - Small industries	R	Available (short term)	Not applicable	Addition of two industries: textile, oil refineries Note: Small industries are not clear
P	Extension of industrial zones. Cancelled				In some countries Syria, Lebanon), they have not been defined.
S	Number of industrial accidents	R	Not available	Not applicable	Important indicator but difficult to measure
P	Area occupied by mines and quarrying. Cancelled				Definition should be clarified.
P	Number and area of industrial sites in the coastal zone	R	Available	Not applicable	

Industrial pollution indicators

Type PSR	Indicator	Relevance	Feasibility	Targets and reference values	Comments
P	Emissions of carbonic gas (CO2)	R	A	Framework Convention on climate change	
P	Emissions of methane (CH4)	R	A	Framework Convention on climate change	
P	Emissions of CFC	R	A		Consumption should be added
P	Emissions of SO2	R	S.T		
P	Emissions of particles (PM10)	R	S.T.		
P	Emissions of NOx	R	S.T.		
	VOC	R			Indicator to add
	Heavy metals	R			Indicator to add
					For all these indicators, the comments included in the Working paper were not felt relevant, at least unclear.

Industrial pollution indicators

Type PSR	Indicator	Relevance	Feasibility	Targets and reference values	Comments
S	Concentration of SO ₂	R	M.T.	Turkey has established targets for	All concentrations are core indicators. But Measurement units need to be cleared (8 h basis?)
S	Concentration of particles	R	M.T.	concentrations.	
S	Concentration of NO _x	R	M.T.		
S	O₃	R	M.T.		Available data in Algeria and Turkey
P	Industrial wastes by sector - Solid waste - Hazardous waste	R	M.T.		It is suggested to split Solid from Hazardous waste In Algeria, there are studies, not regular measures.
P	Use of chlorine in chemical industry. To be disregarded	NO			
P	Consumption of oil as combustible. Cancelled	NO			
P	Consumption of natural gas as combustible. Cancelled	NO			

Industrial pollution indicators

Type PSR	Indicator	Relevance	Feasibility	Targets and reference values	Comments
P	Consumption of water by industry	R	S.T.	Not applicable	
P	Industrial wastes in water : - BOD5, COD - suspended matters - Toxic materials - Heavy metals - Bacteriological indicator	R	M.T.	Some targets exist.	The Convention of Bâle has nothing to do here. Toxic and metals are felt too general, should be specified.
R	Quantity of waste water treated by the industry / consumption of water by industry	R	A	No answer	It should be specified, i.e. kind of treatment (primary, secondary)
R	Share (in %) of industry connected to waste water collecting system	R	A	No answer	
R	Private and public allocated funds for pollution abatement: - by activity sector - by action against pollution	R	S.T.	No answer.	

NATIONAL THEMATIC INDICATORS - SOLID WASTE MANAGEMENT
Working Group N° 4

Indicators set proposed by Working Group

	PSR	Relevance	Feasibility.	Reference values
1) Generation of municipal solid waste	P	R	MT	National Policy
2) household waste production per capita	P	R	ST	National Policy
3) household waste collected per capita	P/R	R	ST	National Policy
4) Distribution of municipal waste	P	R	ST	National Policy
5) Cancelled				
6) Rate of waste recycling	R	R	MT	Policy guidelines
7) Rate of waste re-use	R	R	MT	Policy guidelines
8) Treatment of municipal waste (not recycled or not reused)	R	R	MT	Legal Requirement
9) Expenditures on waste management	R	MIR	A	Policy guidelines
10) Area of illegal discharges	P	R	MT	Policy guidelines
11) Rate of population served by collection system	R	R	MT	Policy guidelines
12) Existence of a legislation	R	R		
13) Cost recovery	R	R		

* 1, 3, 5, 10-13 indicators different from the previous list

Republic of Lebanon
Office of the Minister of State for Administrative Reform
Center for Public Sector Projects and Studies
(C.P.S.P.S.)

2- Component level indicators

The role of the project is to provide answers to the deteriorating water supply and sanitation system in Durres district by technical actions (rehabilitation, repairing, metering etc.) and strengthening the institutions in charge.

Therefore we looked at how each component of the projects could contribute to the main goal. Focus was made on measuring the **impacts** of the project..

Component Impacts Indicators

A. *improvement to the Durres water supply and transmissions systems*

Objective : increase reliability of the supply system, focusing on rehabilitation of pumping systems and wells.

The focus is put on increasing the quality and services to consumers by increasing the water access and the daily water access

Indicator	Unit	Current	Milestone	Target
number of hours a days water is provided to consumers.	H/day	less than 5 hours/day in average		above 6 to 24 h/days
number of quality samples not meeting bacteriological quality criteria	%			reduction
volume of water lost in the transmission system / water supplied	%			reduction

Outcomes requirements of the project

These qualitative and quantitative indicators require a monitoring system for drinking water quality assesment and for water volume at sources and at the entrance of the distribution system.

B. *rehabilitation of the distribution networks in Durres city, Durres beach and Shivak*

Objective : improve the efficiency of water distribution networks

The focus is put on reducing losses and improving storage capacity.

Indicator	Unit	Current	Milestone	Target
Indicator of efficiency of water distribution = water billed/ water produced	%		in 1998: 65%	in 2010 80%
% of water lost in the system	%		in 1998 : 35 %	in 2010 20 %
daily water storage capacity/ daily demand	%	17%		in 2000 : 25%

C. implementation of a water loss reduction and water management program

Objective : improve water metering at the supply sources and at homes together with awareness campaigns in order to control and measure performance of demand management.

Indicator	Unit	Current	Milestone	Target
daily consumption of domestic water per inhabitant (separate urban and rural) (daily consumption of industrial and bussiness sectors)	l/day/cap			80 l/day/cap
% compliance of industrial , bussiness with metering water law	%	50 % in 1993		100%
% of domestic consumers really metered				30%

D. critical repairs to the sewerage collection systems in durres system

Objectives : increase the efficiency of the sewage system by rehabilitating the sewage pumping stations

Indicator	Unit	Current	Milestone	Target
population connected to sewerage / total population of the area (separate urban and rural)				
means to measure performance : ?				

E, F. institutional strenghtening

Objectives : strenghen

Indicator	Unit	Current	Milestone	Target
introduction of financial instruments :				
charging systems for drinking water				
charging systems for sewage				



ENVIRONMENTAL PERFORMANCE INDICATORS FOR PROJECTS

INDUSTRIAL POLLUTION CONTROL

(from an Algerian case)

Working Group N° 2

I. Project context and purpose

- Sub-projects
- Institutional reinforcement
- Environmental investment

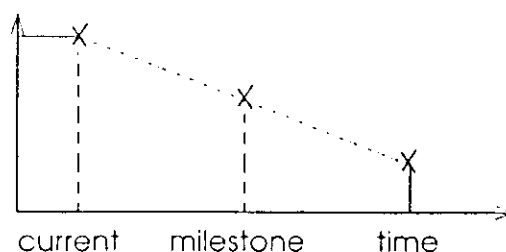
II. Performance Indicators

- Project level → - Pressure/State indicators
- Sub-project level → - Output indicators

II.1 Project level :

Pressure indicators : mainly loads

To air : VOC
dust
NOx
NH₃



To water bodies : heavy metals

Oil
COD
BOD
nitrates

State indicators : mainly concentrations

- concentrations (as above)
- impact/status on fauna/flora/soils

- health impact/status

difficult to implement, see regional reference values or WHO

II.2 Sub-project level :

A) *Capacity building* /Institutional
/Reinforcement

1) Capacity building

- number of trained personnel
- job description/definition of tasks
- average years of experience in the field
- time to issue permits

2) Legal & regulatory framework

- existence of reference values and regulations
- n° of agreements/permits signed
- existence of procedures for public hearing.

3) Monitoring and Enforcement

- number of infractions/charges
- number of cases taken to court
- number of pollutants monitored
- frequency of sampling
- number of laboratories engaged in monitoring
- environmental audit capacity
- compliance with EIA requirements.

4) National Environmental fund

- number of investments funded
- capital base.

B) *Environmental investment* (for each plants)

- performance indicators :

$$\text{ratio} = \frac{\text{load}}{\text{target}}$$

ENVIRONMENTAL PERFORMANCE INDICATORS FOR PROJECTS
SOLID WASTE/ENVIRONMENTAL MANAGEMENT PROJECT

(from an Lebanese case)

Working Group N° 3

CONCLUSIONS

1- Project level: Pressure-State Indicators

The ultimate aim of the project is to improve the solid waste management for the whole country.

Environmental Pressure Indicators

Indicator	Unit	Current	Milestone	Target
GENERATION OF MUNICIPAL WASTE	kg/cap/d	0.6 to 1.1		

Environmental State Indicators

Indicator	Unit	Current	Milestone	Target
CONTAMINATED COASTLINE	KM	200		0 (5 years)
POPULATION EXPOSED TO NUISANCES FROM WASTE	%	20		0
CAPACITY BUILDING				

2- Component level indicators

Component outcomes Indicators

A. *Collection Equipment*

Objective : Improve the collection of waste by increasing the quantity of collected waste, improve the quality of the collection, by minimizing the distance covered by waste

Indicator	Unit	Current	Milestone	Target
RATE OF COLLECTED WASTE	%	10		100 (2000)
FREQUENCY OF THE ROTATION	Nb/Day	1 (GB) NA (LB)		1 (GB) 3 /weeks

B. *Disposal and treatment Facilities*

Objective : Improve the waste treatment by increasing the quantity of recycled and composted waste.

Indicator	Unit	Current	Milestone	Target
RATE OF RECYCLED WASTE	%	15-20		Maxi.
RATE OF RESIDUAL WASTE	%	50		Mini (20-25 %)
NUMBER OF UNSANITARY DUMPING SITES	Nb.	6 Major +x rural		0 (5years)

C. *Medical Waste*

Objective : Improve the treatment of hospital waste with appropriate collection and appropriately designed incinerator.

Indicator	Unit	Current	Milestone	Target
QUANTITY OF MEDICAL WASTE GENERATED	kg/bed	1 kg/bed/d		Mini
APPROPRIATE COLLECTION OF MEDICAL WASTE	%	0		100
% OF MEDICAL WASTE PROPERLY DISPOSED	%	0		100

D. *Technical Assistance*

Objectives : Improve the engineering services for the design of the technical components of the project. Improve capacities of CDR, MMRA and the principal municipalities related to solid waste management.

Indicator	Unit	Current	Milestone	Target
COST RECOVERY BY MUNICIPALITIES	%	NA		100 (10-15 y)
% OF TAX COLLECTION RATE	%	NA		100

ENVIRONMENTAL PERFORMANCE INDICATORS FOR PROJECTS INSTITUTIONAL BUILDING IN ENVIRONMENTAL MANAGEMENT

Working Group N° 4

(from a Moroccan case)

PROJECT DESCRIPTION

Project objectives

The objective is to assist the Government of Morocco in strengthening the institutional and regulatory framework for managing environmental protection.

It is expected that the establishment of the needed environmental institutions and full development of the necessary environmental laws would require a concerted and long term effort spanning many years. The project, representing the first step of such efforts, will define the elements for and initiate the process of strengthening the Government's environmental capacities.

The project is complex from an institutional viewpoint: it comprises six sub-projects and involves the participation of several actors/agencies.

SUB PROJECTS

- 1. Strengthening the technical and administrative capacity*
- 2. Restructuring the National Council for Environment (CNE)*
- 3. Enhancement of the legal and regulatory framework*
- 4. Designing an enforcement/compliance system in environmental protection
(pollution prevention)*
- 5. Promoting an environmental education and awareness programme*
- 6. Establishment of a national environmental information network*

PERFORMANCE INDICATORS

INSTITUTIONAL BUILDING PROJECT

DIFFICULTIES

- COMPLEXITY OF THE PROJECT
- DISTINGUISHING BETWEEN:
 - ADMINISTRATIVE PERFORMANCE
 - ENVIRONNEMENTAL PERFORMANCE
- QUANTIFYING RESULTS AND IMPACT OF SHORT TERM EFFORTS

THREE TYPES OF PERFORMANCE INDICATORS.

- I. EXPENDITURES INCURED BY PARTNERS
- II. PARTNERS COMMITMENTS
- III. CENTRAL AND LOCAL ADMINISTRATION CAPACITIES

Appendix 5

Results of Workshop Evaluation

Workshop evaluation

A/ Workshop objectives: "Performance "

Objectives	1	2	3
Review conceptual framework	1	7	20
Indicators and decision making	1	18	7
Develop capacity - thematic national indicators	6	12	10
Develop capacity - project indicators (-1)	6	16	5
Follow-up activities (-3)	3	11	11

1. not achieved

2. Average

3. achieved

(1, 16, ... = number of answers according to typology)

B/ Comments (taking into account the context and objectives of the workshop)

B/1. Primary benefit

- Pedagogic sessions.
- Excellent results. A set of key environmental indicators and how to use them (targets, milestones, measures) is in place for the region.
- Learning about importance of indicators on both national and project level + importance of information exchange + urgency of developing reliable data base.
- Meeting people.
- Getting a common understanding on the definition and value of indicators. Very useful.
- Networking, exchange of experience and see what is needed in the future.
- Exchange of experience.
- Very beneficial.
- Cet atelier nous a permis de voir plus clairement les horizons et buts à atteindre dans le futur.
- Good introduction to indicators (but not so beneficial for people who know it already).
- New frame about the problem in discussion.
- Thematic national indicators - knowing the concepts better.
- Networking, meeting colleagues.
- Influence ; measuring results of policy logic.
- Conceptual framework. Definition of the different types of indicators. The PSR.
- Better understanding of indicators.
- Transfer of international experience on indicators (OECD, etc..).
- Mise en place progressive d'un langage commun sur les indicateurs.
- Understanding the importance of « indicator » concept as a tool and sharing the experiences of other Mediterranean countries on this issue.
- Learning about countries experiences. Clearer idea about how to develop both capacity-thematic national indicator and project indicator.
- Understand the Mediterranean countries background information for Metap projects and sustainable development, to be able to communicate with the UNDP Regional Office in Cairo on behalf of my nation.
- Learning about other countries opinions. Learning about new concepts of indicators.
- Raising interest at national levels.

B/2. What better

- Participants: certain countries did not send the right level of representation. Presentation: every country should make at least one presentation.
- Distribute material earlier; go more in depth in lessons, challenges, limitations, etc...
- It needed more time: working sessions were short.
- More specific examples and discussions. Concrete issues.
- Necessity to make a clear distinction between sustainable development indicators and environmental indicators.
More time for panel discussions and group work.
- More large, specific and explicit working sessions.
- Une approche scientifique plus poussée quant à l'élaboration et à la mise en oeuvre des divers indicateurs.
- Exercise on project indicators formulated in a more complicated manner than necessary; rigid structure limited ability to brainstorm in working groups.
- A closer exchange between participants.
- Project indicators and capacity building indicators.
- Better overview of process (in national contexts and within Metap).
- List of core indicators.
- The impact of indicators on public policy. How to develop indicators that can drive environmental policy.
- Seminar on conceptual framework indicators.
- Objectives to be clearer. Working program to be clearer.
- More time can be given for the working groups and related documentation can be provided earlier.
- More time for working groups, more guidelines for project indicators.
- To invite both Statistic Office and Min. Of Environment at the same time.
- Objectives of workshops could be stated more targeted, or they have been stated too broad, too much of them within the available time.
More « professional » moderating of workshops.
- Translation

B/3. What missing

- A word on other emerging indicators, such as air pollution, noise, desertification ...
More consideration to the technical aspects of data collection.
- Concrete measures. Better definition of the role of the international institutions (Blue Plan, Metap, etc..) vis à vis the indicators.
- Statistical aspects.
- More clearer definitions for the questionnaire that was filled out before the meeting.
- Issue of quality of raw data.
Issue of precise definition of indicators
- Objectives and background document clearer.
- Discussions and review of the thematic indicators that were sent to us before the workshop.
- L'approche méthodologique quant aux travaux des groupes devrait être mieux élaborée.
- Exchange and sharing of ideas and experiences among participants.
- Some NFPs.
- Process indicators;
Discussions on complementary steps at national level.
- (Not missing but to develop) National and common products linked to indicators.
- A session dedicated to the difficulties encountered by the countries in working on indicators. This is an important learning tool.
- Methodology for developing environmental performance indicators.
- Manque de focalisation sur des indicateurs spécifiques dans la région.
- The methodology for the calculation of environmental indicators should be given.
- Methodology for environmental indicators.
- Environmental statistical infrastructures on methodological issues are missing.
- More concrete guidelines.
- Presentation by each Metap country concerning national experience in the area of decision-making process.

B/4. Unsolved issues

- A clearer list of follow-up key issues. Looking ahead.
- Data collection
- Agreement + buy-in seemed to be missing. There was practically no stress on process related issues.
- Data gaps, technical detail concerning the indicators.
- Some priorities of Metap.
- How to develop procedures for national and concerted data collection by various partners, leading up to the indicators.
- Process issues - Capacity building indicators - SDI versus environment indicators - « integrating » indicators.
- Involvement of several countries.
- Better delineation of indicators.
- Delegations should work on generating indicators on the subject instead of working on limited number of indicators.
- Il ne faut pas chercher à faire émerger des indicateurs là où ils ne seront pas mesurables, pertinents et efficaces.
- How to work together.
- Indicators for decision making. How and what is the way to influence on decision maker.
- Institutional environmental performance indicators.
- Framework of indicators in general (it is the task of further workshops)
Harmonisation inter countries. Important feature of indicators is comparabilities.
Different conditions among countries and guide from, Blue Plan asked countries to evaluate indicators regarding the country condition. Unsolved is core set of indicators.
- A real action Plan for 1998.

B/5. Interest of working groups:

- - *National* } Magreb's working group was better prepared for discussion. Uneven
- *Project* } participation in the debate. Same interest for both issues.
- - *National* } Both good.
- *Project* }
- - *National* } very interesting discussions took place and members of group were able
to agree on a number of indicators.
- *Project* } There was some confusion during this session, problem in following
the logical framework followed.
- - *National* } Very
- *Project* } Interesting, but they are still somehow « blurry » for me
- - *National* } Results of each group should be integrated and precised
- *Project* } Interesting exercise
- - *National* } Medium
- *Project* } High
- - *National* } Both of them were interesting
- *Project* }
- - *National* } this is a good experience in two groups as national and in project cases.
- *Project* }
- - *National* } High
- *Project* } Low
- - *National* } Both allowed to apply concepts immediately after the presentations
- *Project* }
- - *National* } Some BP persons seem not to be aware enough about the limits and
problems DCM countries are facing
- *Project* } Interesting
- - *National* } National thematic indicators much more clearer for the delegations, so
satisfied
- *Project* } For most of the delegations, project indicators are not clear. So
moderately satisfied.
- - *National* } Intéressant
- *Project* }
- - *National* }
- *Project* } The relevant documentation can be provided before
- - *National* } Very interesting but tasks and objectives were too many to finish
- *Project* } and understand the object in short time, especially for project
- - *National* } High, but not enough time
- *Project* } High, extremely lack of time, may be the background of this subject was
bad, so we needed a lot of time for clarification.
- - *National* }
- *Project* } There is a great need for a training course in the area of project cycle and
preparation

B/6. Interest of panel discussions

- Good
- The best session was on indicators + decision-making, as it highlighted problems in the process.
- Very interesting because we shared experiences.
- Not enough time for discussion, mainly on the different national context and constraints.
- Very good but lack of examples.
- Very interesting.
- Plus de temps et vers un débat plus ouvert, pour permettre un échange d'expérience aussi large que possible.
- Instructive for each problem or element in discussion.
- Too short ; more time for concrete problems.
- Very good, could have been earlier.
- High
- Panel discussions were OK. But more time was needed to flush out issues more adequately.
- Moderately satisfied.
- Intéressant.
- Very interesting. The regional perspective was missing.
- It was so beneficial and helpful, but the time was so limited.
- It was very interesting, more time should be given to the panel discussion.
- Really useful. Would have been useful to arrange a panel on « meeting difficulties on environmental performance indicators in nations ».
- so so.
- Need more elaborate discussions and a longer time allocation.

B/7. Workshop design and organization

- Excellent. I took notes on the details taking in consideration during the conference to facilitate our life while in Beirut. Furthermore, the Lebanese team was friendly, charming, warm and their work approach equalled their social performance. Congratulations to all.
- Very condensed in a very short time
- Arab should have had more secretarial support so as not to seem to be doing everything alone.
- Excellent, even the smallest details had been taken into consideration.
- Excellent. (Several times)
- Quite good.
- Medium (lack of means).
- Organisation excellent.
Design => reduce lectures to minimum and allow more time for facilitated exchange of ideas/experiences.
- Very good logistical support.
- Organization needed more thought. There was some breakdown into arguments over what indicators were.
- Good organization. Bravo !
- Good, but all the working documents should be sent before the workshop.
- Organisation satisfaisante.
- Some infrastructure lacking.
- Good, but the translation from french into english was not satisfactory.

B/8. workshop sessions

Please review quickly the structure of the seminar and give a mark from 1 to 3 (1 = low, 2 = fine, 3 = very or Yes/No where appropriate)

	Were explanations clear?			Was it useful?			Was time too short?	
	1	2	3	1	2	3	Yes	No
Session 1 Opening & introduction	3	7	12	2	9	11	2	20
Session 2 Conceptual framework & lessons from experience	1	10	12	1	10	12	3	19
Session 3 Lessons + stat. & indicators	1	8	12	1	9	11	2	18
Session 4 Break out session on NTI	3	12	7	1	12	9	8	15
Session 5 Wrap-up from break out session	1	15	5	2	11	10	5	17
Session 6 Break out session on Project indicators	5	11	7	3	7	13	10	13
Session 7 Wrap-up from break out session	3	12	8	3	9	12	3	20
Session 8 Indicators & decision making	2	11	11	2	6	16	10	13

additional comments :

- Excellent background documentation ; complete and timely distributed

EEA should have come

In the practical cases it is important to review more in detail the legal framework

You hit the point. Two targets achieved : the theoretical and practical aspect of setting up key indicators.

At project level there are more environmental indicators than those fixed by law. The state should not always dictate what is the minimum requirement or ceiling.

The institutional case of Morocco can be reviewed in one year (participatory approach/experiences)

The topic of project indicators needs to be analysed in a more structured approach (with indicators ?) in a future session.

Pertinent comments from the Turkish delegation on further technical debate on data collection and training. Good summary on the « methodology ». A clearer message on the follow-up was missing.

From Damascus (definition of indicators types) to Beirut (development of key indicators for Env./Metap purposes), the region has enormously advanced in setting up the basis for monitoring environmental performance. For the next workshop, NFPs will be ready to come with specific targets, milestones and a good knowledge of their current environmental status. A bridge can be lay-out to the Med-policies debate. Another bridge to link targets, calendars and policies to investment planning and programmes to abate pollution. As soon as the national indicators lead towards projects, these projects should start developing other type of indicators (e.g. economic indicators, such as cost/unit, cost recovery, tariffication targets and milestones...).

- As sub-regional workshops would result in diversified ideas about indicators the series of sub-regional workshops should end with an integrated workshop where all parties can share their notes and agree on a unified methodology for developing indicators.
- It could be very useful if one more day was dedicated to review and discuss (in working groups) the document you sent to us some days before, on thematic performance indicators.
- Cet atelier nous a permis de trouver des réponses à des questions que nous nous sommes posées au sujet des divers indicateurs, tout en nous permettant une meilleure maîtrise dans le futur du cadre conceptuel de cet aspect.
- Thanks for the good work. Keep up the good work
more participation/ less lectures => prerequisite to achieve the objective of working together.
Need synthesis for working groups
some loose ends : e.g. proposal from Selma/Turkey, to create training centers for Env. Statistics was left undebate. Facilitator's job to ensure not loose words.
- Thank you for a very good successful workshop.
- Work on indicators could have been strengthened by direct linkages related to national plans/programmes.
- Need to set up a Mediterranean training center on Environment and Sustainable Development Statistics and Indicators in order to exchange our experiences among the Mediterranean countries.



Appendix 6

List of Documents

LIST OF DOCUMENTS

1. Working documents

- Working paper: National Thematic Indicators - Blue Plan
- Questionnaire: National Thematic Indicators - Blue Plan
- Developing Environmental Performance Indicators in France
Thierry Lavoux & Cécile Rechatin - IFEN (overheads)
- Assessing Environmental Performance
Christian Averous - OECD
- Integrated Environmental Assessment and Performance Indicators
Ronan Uhel - EEA (overheads)
- Network: A European Case « EIONET »
Ronan Uhel - EEA (overheads)
- Conceptual Framework and Methodologies for the Indicators
Kirk Hamilton - WB/ESD
- Performance Indicators for Environmental Projects
Kirk Hamilton - WB/ESD
- Projects Environmental Performance Indicators related to the following briefly presented by experts:
 - Albania Durres water supply rehabilitation project
Domitille Vallée - Blue Plan
and Environmental Indicators - Water Sanitation Management
Albanian Case - A. Cullaj - Albanian delegation
 - Algeria Industrial Pollution Control Project
Kirk Hamilton - WB/ESD (Oct. 97)
 - Solid Waste Management in Lebanon
Jean-Pierre Glraud - Blue Plan
 - Environmental Management Projet in Morocco
Silvia Laria - Blue Plan
- Sustainable Development Networking Programme - An Observatory Approach
George Akl - SNDP - Dec. 97
- Networking proposals:
 - Setting up a network on EPI at Mediterranean level
 - Environmental Performance Indicators - Internet Home Page
Jean-Pierre GIRAUD - Blue Plan

- Indicateurs de l'Environnement et du Développement Durable au Maroc - Stratégie et état d'avancement
Mdarhri El Kebir Alaoui - Observatoire National de l'Environnement du Maroc (ONEM)

2. Documents of general information

- IFEN Environmental Performance Indicators in France (edition 1996-1997)
- IFEN Indicators of sustainable development : a synopsis of work abroad and key points for discussion
Cécile Rechatin, Jacques Theys, Thierry Lavoux and Vincent Piveteau (June 97)
- WB Environmental Performance Indicators - A first edition note
Environment Department - (Feb. 1996)
- WB Expanding the Measures of Wealth - Indicators of Environmentally Sustainable Développement
Environmentally sustainable development studies and monographs series, n° 17 - (1997)
- OECD - Assessing Environmental Performance (leaflet)
- OECD Environmental Indicators - Overview of programmes and major products (leaflet)

3. Other documents - miscellanous

- Turkish Environment Information from Censuses and Surveys
Selma Güven - State Institute of Statistics - Turkey (Sept. 97)
- The Cities Environment Kit : excerpt on The Tools for Environmental Assessment
United Towns Development Agency - (May 96)
- National Environment Strategy for Jordan: excerpt on Surface and Groundwater

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