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**ENVIRONMENTAL INFORMATION: KNOWLEDGE MANAGEMENT OF SUPPLY AND
DEMAND**

**PART 1: ESTIMATING THE MAGNITUDE FOR THE DEMAND
OF ENVIRONMENTAL INFORMATION**

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Introduction

1. The purpose of this paper is to describe the methodology used in assessing the environmental information needs of the following decision making groups:

- Governmental sector (central, federal and local)
- Academic and research community
- Business and industry sector
- Non-governmental organisations and civil society.

The questionnaire developed for the information needs assessment is appended as Annex I.

Background

2. In response to UNEP's Governing Council decisions 20/4 and 20/5 of February 1999 and the recommendations contained in Agenda 21 concerning access to environmental information, UNEP is engaged in a number of initiatives aimed at improving the accessibility of environmental information by removing bureaucratic, linguistic and technological barriers. UNEP's Global Environmental Outlook (GEO) 2000 report presents a comprehensive integrated assessment of the global environment. All of the four GEO 2000 recommendations for future action focus on assessing information needs and capabilities to meet those needs, especially in order to tackle root causes. Even development donors, such as the European Commission's Development Division, are now reviewing the flow of information. In developing countries,

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obtaining relevant information is often an urgent survival issue. With the current state of the earth's environment, the need to obtain relevant information to deal with emergencies will certainly increase.

3. A major goal of UNEP, therefore, is to establish, at the national level, a formal information service on the environment through a partnership building exercise involving the main environmental information suppliers and major user groups in each country. The intention of UNEP's environmental information access programme is to provide the tools and guidelines to each national level consortium charged with the collective responsibility of establishing and implementing this service. On the supply side, a systematic approach must be taken to identify those institutions that have the capacity to collect manage and disseminate information, in a particular sectoral area related to environment and sustainable development. On the demand side, a methodology needs to be developed in order to assess exactly what type of environmental information users actually need. Obviously different categories of users – governmental decision-makers, academia, NGOs, private sector, etc – will have different information needs. However, all involved, whether they are on the supply or demand side, will need to be able to transform that information into knowledge. Therefore, a crucial link in this information chain lies with accurately assessing what the users need and especially in what form, even when the users might not know what information they require.

4. Consequently, the two main tasks for which UNEP-WCMC is responsible are to:

- develop a methodology to assess the information needs of users who require access to environmental information; and
- develop a methodology to assess the capacity of institutional suppliers of environmental information, in a given sectoral area, to meet those needs (working paper UNEP/INF2000/WP/7).

Starting point - a solid definition

5. For the purpose of this paper, the following definition of *environmental information* from the Aarhus Convention will be used:

Any information in written, visual, aural, electronic or any other material form on:

(a) The state of elements of the environment, such as air and atmosphere, water, soil, land, landscape and natural sites, biological diversity and its components, including genetically modified organisms, and the interaction among those elements;

(b) Factors, such as substances, energy, noise and radiation, and activities or measures, including administrative measures, environmental agreements, policies, legislation, plans and programmes, affecting or likely to affect the elements of the environment within the scope of subparagraph (a) above, and cost-benefit and other economic analyses and assumptions used in environmental decision-making;

(c) The state of human health and safety, conditions of human life, cultural sites and built structures, inasmuch as they are or may be affected by the state of the elements of the environment or, through these elements, by the factors, activities or measures referred to in subparagraph (b) above.

6. Spending time analysing this definition is important, as it is central to understanding our goal. According to Peter Drucker's articles in the *Harvard Business Review*, danger lies in the plausible but incomplete definition - not in the wrong one. There is only one safeguard against the incomplete definition: check it again and again against all the observable facts, and throw out a definition the moment it fails to encompass any of them.

7. The effective decision-maker always tests for signs that something is atypical or something unusual is happening by asking the questions: does this definition explain the observed events, and does it explain all of them? It is worthwhile considering the EU Commission's experience on Council Directive 90/313/EEC on Freedom of Access to Information of the Environment, in environmental information is defined as follows:

Article 2

For the purposes of this Directive:

(a) 'information relating to the environment' shall mean any available information in written, visual, aural or data-base form on the state of water, air, soil, fauna, flora, land and natural sites, and on activities (including those which give rise to nuisances such as noise) or measures adversely affecting, or likely so to affect these, and on activities or measures designed to protect these, including administrative measures and environmental management programmes

8. In regard to this particular Directive, individuals and organisations had lodged 156 complaints with the Commission. One of the main problems highlighted by the complaints was the definition of “information relating to the environment”. In some Member States, a strict interpretation had led to refusals to provide information considered not to fall within the scope of the definition. Examples of such information included information on the public health effects of the state of the environment, on radiation or nuclear energy and on financial or needs analyses in support of projects likely to effect the environment.

9. Even though this Directive already contained a broad definition of environmental information, experience suggested that the definition needed to be made more comprehensive and explicit so as to encompass certain categories of environmentally-relevant information, which had been excluded from the scope of the Directive due to a restrictive interpretation. For example, it would be helpful if the definition contained a specific mention of cost-benefit and other economic analysis used within the framework of activities and measures affecting or likely to affect the environment. This would remove uncertainties identified during the review process as to how far the current definition applies to economic and financial information.

Outline of methodology

10. The methodology is composed of 5 steps:

1. Identify where we want to go, then work backwards
2. Assess where we are in relation to where we want to go
3. Use of questionnaires can tell us two things: where we are now and what the obstacles are. How it is applied is also crucial, must get responses from right people - front line.
4. Questionnaire that assesses environmental information needs will tell us where we are
5. Questionnaire that assesses the institutional capacity to meet that need will tell us how to get there.

Description of methodology

11. We can start by placing a point anywhere, because the most important point is the point where we are in relation to where we want to go- that is the distance. For example, on a piano, you can start a tune from any note, because it is the distance between notes that matter. Then, we need to mark out what is in between and what we need in order to get there. This part is similar to navigating a journey by road or sea. Not only do we have to get there, but we also have to know the best route and the best route would depend on the tools we have available- car, plane, ship. The following questions then surface. Are we going somewhere we have never been before? Have we tried this particular route before or have we tried another one? Why is important to know where we want to go? Is it in order to plan the best route? Why work backwards? Is it then important to know where we truly want to go? If you are clear can you then plan the best route? Do people usually take the straight route without looking at what is in between? What if there is a mountain and they are walking? Is that why they give up? All these things are linked.

12. Given that we can place a point anywhere. How do we know where to place the point we are at? Here we have to find out, investigate and research. Could you use the symbol of a compass? What does it depend on? This is where a true understanding of ourselves comes in - that self-awareness and then an ability to be aware of others. When dealing with people, we cannot take things on the surface or at their

word. Words are treacherous indicators; there are too many variables. Words must be combined with observation. The questionnaire must be combined with giving it to the right people. So, we have to have an understanding of who does what and its relation to what we want to do or where we want to go. Then, we can have the next crucial item- what route we have to take.

13. After going through the above thought process, the methodology took shape. Only by looking at where the questionnaires are placed in the bigger picture, by knowing where they fit, did their value and then what they had to accomplish become clear. This allowed them to be placed in a context. Therefore, the questionnaires had to ask the following: where we want to go, where we are now, the best route (involves knowing the terrain), how to get there and the vehicle to use.

An introduction to Logical Framework Analysis (LFA)

14. The Log Frame has become one of the most widely used tools in project planning in development. A huge range of northern-based development agencies and donors uses it. The first concept of LFA is Project Logic. This is simply the statement of how the main elements of a project will lead to the desired success. There are usually four parts of the Project Logic: Inputs, Activities, Outputs and Purpose. The “logic” of the Project Logic is that each part will lead to the next part up the hierarchy. In effect, LFA is stating: IF these inputs are available, THEN these activities can take place. Next, IF these activities have taken place, THEN these outputs will be produced. Finally, IF these outputs are achieved, THEN this purpose will be fulfilled.

For example:

1. IF we have seeds and tools THEN we can sow a crop
2. IF we sow a crop THEN we will get more food
3. IF we have more food THEN
4. We will be better off.

By providing the inputs of seeds and tools, we have allowed the activities of planting a crop, which will achieve the output of making more food available. This will contribute to our purpose of making people better off.

15. LFA appears to be assuming a direct linear inevitable sequence of events, but this is only partly the case. The next thing that is required for a good LFA is an explanation of what will make it likely that the logical sequence will actually take place. More important perhaps, it asks what might make the logical sequence fail.

16. The next column in the logical framework is sometimes called “Necessary conditions for success” or *Important assumptions*. This is one of the most useful parts of LFA since it obliges the project planner to examine the assumptions that they are making (although, it is often easy not to notice that one is making assumptions).

17. The necessary conditions need to be explained for every step in the hierarchy and for each range of activities.

In the example of growing a crop, a number of important assumptions are being made:

- At the level of activities, the inputs of seeds and tools will only lead to sowing a crop if people are able and willing to do the work of breaking the ground and sowing the seed.
- At the level of outputs, the sown seed will only turn into a crop if there is rain and other conditions for good plant growth.
- At the level of purpose, the harvest will only make people better off if their basic state has remained the same and the food is an addition to their situation.

Sometimes it is useful to examine a vertical flow of logic by completing the statement: “This will only happen if...”.

18. Some necessary conditions do not need to be examined, because they are very likely to occur. If a necessary condition for success is very unlikely to occur, then you need to redesign the project. If you cannot redesign the project, then you must have a very clear assumption, and you have to think of a totally new approach.

19. The important assumptions are those that might occur and need to be taken into consideration. They add to the risks that the proposed work will not be successful, but they do not make it impossible to try.

The remaining columns are concerned with how to monitor the progress in each level of the hierarchy up the Project Logic. The LFA asks how one can tell that the Activities have taken place, that the Outputs have been achieved and that progress has been made towards the Purpose.

20. Often the indicators are described as *Objectively Verifiable Indicators* (OVIs). This suggests that any person can observe the indicators and would reach the same conclusions about the success or otherwise of the project or part of the project. The indicators often need to be countable, because they explain how big the changes will be. In the example on crop production, the indicators might be the number of farmers who will produce a particular amount of food.

21. It is then necessary to explain how the observations will be made. It is not enough to say that the crops will be grown. It is also important to explain how the grown crops will be assessed and by whom and when. This is normally called the *Means of Verification* (MoV).

Applying LFA to the questionnaire

22. Consider now the application of LFA to the issue of access to environmental information:

1. IF we have access to Environmental Information (EI) and the tools to access it, THEN we can participate in decision-making
2. IF we participate, THEN we will want EI
3. IF we have EI, THEN we will want it to be relevant
4. IF it is relevant, THEN we can make more informed decision making

23. By providing the inputs of access to EI and the tools to access it, we have allowed the activity of participation, which will achieve the output of making more relevant EI available. This will contribute to our purpose of knowing what EI they want.

24. The questionnaire is structured to start with where we want to go and works backward to what we need. This structure has been enhanced using the following general rules of constructing a questionnaire:

- Short as possible to avoid boredom
- Avoiding ambiguity, confusion and vagueness
- Avoiding prestige bias
- Avoiding leading questions
- Avoiding asking irrelevant questions- questions beyond the capabilities of respondents.

Who should be surveyed?

25. With this questionnaire, we are dealing with two major issues:

- The large amount of people in each group
- Motivating people within each group to answer the questionnaire

26. Collaborating groups who will administer the questionnaire should be allowed to discuss and come up with the answer to who should be surveyed. Possible suggestions might include adding the questionnaire to their web site, sending group emails to those that use their services, posting to those same users or leaving them in their library. However, as outlined in the second paper (UNEP/INF2000/WP/7), time, money and resources may not always be available for institutions to administer questionnaires.

Concluding remarks

27. Everyone has to role to play and to play it until the end. We cannot ever assume we know it all- that leaves it open to assumptions which can turn out wrong, and that is dangerous. We need to involve people in their world and let them help us to gauge its conditions. The one thing that unites us all, irrespective of race, colour, gender and religion, is that we all depend on this world to live. That not only is one person's unique relationship with this earth, but that connects him to everyone else. He becomes dependent on others to not destroy his world. That involves trust. How do we build that trust and get that person to help save the world? What do we then need to understand about our own nature? Everything starts at home, the saying goes- we need to start with ourselves.

28. Bearing this all in mind, the information has to engage us to action- to actually do something with it- understand it, retain it and share it. What about agreeing with it? We will have to trust it, but we must also be able to question it and feel that our questions are welcomed and useful in finding out the truth.

Annex I

Draft Questionnaire: Meeting your environmental information needs

About you

Please tell us about you (for example, you are a student, belong to a NGO or work in the private sector or government):

General areas of interest

Please circle the issues you are interested in.

International Issues:

- | | |
|---|--|
| Air, water and ground pollution | The destruction of the ozone layer |
| Global warming (greenhouse effect) | Disappearance of tropical forests |
| Use of genetically modified organisms | Using up natural resources throughout the world |
| Urban problems (traffic, noise, pollution) | Disappearance of plants, animal species and habitats |
| Nuclear power stations and radioactive waste processing | |
| Other (please specify): | |

National issues:

- | | |
|---------------------------------|---|
| Air pollution | Industrial waste |
| Pollution of the sea and coasts | Damage to animals, plants and habitats |
| Pollution from farming | Pollution in rivers and lakes |
| Production of nuclear power | The risks relating to industrial activities |
| Urban problems | Development of biotechnology |
| Natural disasters | Damage caused by tourism |
| Hunting and shooting | Motor sports in natural environment |
| Other (please specify): | |

Local issues:

| | |
|------------------------------|--|
| Traffic problems | Air pollution |
| Damage done to the landscape | Waste disposal (recycling) |
| Noise | The quality of water for swimming |
| The quality of food products | The lack of green space |
| The quality of tap water | The organisation of civil defence in the face of disasters |
| Other (please specify): | |

Emerging areas:

| | |
|-------------------------|---|
| Fresh water | Forestry |
| Oceans | Biodiversity |
| Environmental law | Sustainable development |
| Local agenda 21 | Poverty and the environment |
| Environmental education | Environmental conventions and protocols |
| Other (please specify): | |

More specific?

If you are concerned with specific issues within the general themes you have selected, please indicate what they are:

Purpose

Please indicate why you want the information (circle all that apply):

| | | |
|-------------------------|---------------------|----------------|
| Domestic use | Personal interest | School project |
| Court case | Campaign | Media use |
| Research | To formulate policy | Teaching |
| For use at work | | |
| Other (please specify): | | |

Disseminating information

Please circle the types of information you are looking for:

Technical reports

Scientific publications

Government policy documents

NGOs policy documents

Legal publications

“Introduction to” publications

Maps

Educational material

Media briefs

Other (please specify):

Cost

Please indicate if you are willing to pay for receiving this information:

Participation

Would you like to go to or be involved in: (yes/ no/ maybe)

Government meetings_____

NGO meetings_____

Campaigns_____

Community meetings_____

Seminars_____

Conferences_____

Lectures_____

Other (please specify)_____

When and where?

Please state what kind of information you might require in order to participate in any of the items you selected (for example, location, time and dates of meeting):

Accessing information

Do you have access to (please circle):

Phone

Fax

Email

Internet

CD ROM-player

Video machine