3   HOW ARE INFORMATION NEEDS DETERMINED?

3.1   Overview

Much background work may be necessary to review the **legal and regulatory framework** affecting an environmental issue before beginning information needs analysis. Important aspects to review include the historic progression of policies and practices leading to the current situation; the need to accommodate, not conflict with related policies and plans; and the degree of mutual confidence and cooperation amongst the stakeholders concerned. Such knowledge injects realism into the information needs analysis, and helps identify what information may be needed for practical policy changes. Once this review has been conducted, the process of identifying specific information needs can begin. For simplicity, this process is divided into three parts: stakeholder analysis, policy analysis and policy support.

3.2   Stakeholder analysis

The aim of this analysis is to determine which groups of people have the greatest interest in an issue, or will be affected by its outcome to the greatest extent. These people — the so-called stakeholders — will usually be the **primary users of the information** which is later developed. For example, if the issue was 'drainage of wetland Y by farmers and housing developers', a broad range of stakeholders might potentially exist, including the farmers and developers themselves, plus representatives from the local authorities, interested non-governmental organisations (NGOs) and community-based organisations (CBOs), the national agency responsible for environmental protection, and politicians.

Inviting too many stakeholders to participate in the process of information needs analysis can lead to high overall costs, prolonged consultation periods, introduction of extraneous issues, and the possibility of conflicts arising. Inviting too few stakeholders could imply that some groups have been overlooked or excluded, leading to resentment and increased likelihood of non-cooperation. Stakeholder analyses can be conducted for many purposes and at any level of detail. Table 1 illustrates a simple structure for recording the **relevance and special constraints** of a set of stakeholders faced with the issue of landscape degradation from intensive agricultural practices.

Table 1 Stakeholder analysis

Stakeholder	Relevance to issue	Constraints
Farmers' interests body	Unsustainable agricultural practices root cause of issue	Meets only twice a year
Local authority	Makes final decisions on land use; influential in promoting best-practice	Very busy; few resources
NGO	Represents local people's interest in protecting landscapes and biodiversity	Represents only a minority of the local population; few resources
National resource management agency	Encourages compliance of local authorities with national-level policies and standards	Natural resources policy framework under review
Politician	Pushing for economic development through intensification of the agricultural industry	Not briefed on environmental consequences
...	...	...

3.3 Policy Analysis

The information needed to address an environmental concern can be determined by asking stakeholders a series of basic questions to discover how decisions relating to the issue are made and how, if at all, objective sources of environmental information are employed. A variety of questions which could be asked of these groups are outlined below:

● **What are your main goals with respect to the issue?**

This question goes straight to the root of the analysis. It aims to uncover what policy and management goals stakeholders are driven by, so that information of the right kind to assist them can be determined. Information which simply augments the existing pool of knowledge, but is not relevant to stakeholder goals, is unlikely to support decision-making effectively.

● **How do you currently make use of information?**

Objective information on the environment may or may not play a large role in determining how decisions are made. For instance, farmers whose lives depend on good yields may feel there is no alternative to clearing vegetation or draining wetlands in order to survive, despite the fact that research suggests that the land has only limited fertility. Similarly, the demand for housing may prove irresistible to developers who, in the full knowledge that irreversible damage to the environment is being done, continue to clear and build. Politicians, too, may be driven more by financial and social necessities, political ideology or international pressures, than by objective scientific evidence.

In most cases, the rational argument for conservation and sustainable use of living resources is clear. What remains is to raise awareness of this argument amongst those who perceive themselves as having few, if any, options but to degrade the environment, and to offer insight and alternatives, not criticism, on how to proceed. Knowing how information on the environment is currently used — if at all — helps to decide what kind of information is most needed by stakeholders to embark on more sustainable practices. For example, a housing developer may be grieved to find that their proposed development would ruin the livelihood of a threatened species, but may do nothing about this unless presented with a series of convincing alternatives. The same is true for unsound or damaging technologies, which cannot be phased out until information on cleaner alternatives is available.

● **What constraints do you work under which might affect your use of information?**

Naturally, there is a variety of ways in which stakeholders may be constrained in their ability to absorb and use information. For example, a farmer who works long hours in the fields will have neither the time nor background to interpret the latest research results on agricultural biodiversity loss. Unless the information presented is brief and simple, there may be little chance that farmers will take up any recommendations which follow, for example, low-impact farming techniques. Even when legislation is passed or government incentives for best-practice are applied, associated information may still be needed to build new skills and awareness. An effective technique is to identify and sensitise opinion leaders within the farming community, and then support them in the wider dissemination of technology and practices.

Similarly, busy politicians and decision-makers in government may not see the value of additional information, particularly when this is presented in too much detail or at the wrong time. They may feel that they have more urgent priorities to attend to. Clearly, there is little benefit in delivering information to decision-makers unless it reaches them at the right time, in an easily interpretable form, and with reputable scientific credentials and sources. For example, if a meeting is scheduled to review and update a national policy on conservation and sustainable use of wetlands, then supporting information must be delivered well in advance and, also, through appropriate governmental channels. If it arrives late, is deemed to be too complex for busy people to comprehend, or it emerges from an unfamiliar source, then it may have no impact at all. Such constraints on information usage are exceedingly common and underline the need for information professionals to understand the decision-making strategies and procedures of those whom they wish to influence.

● **What laws, regulations and related policy initiatives affect your activities?**

Stakeholders at all levels — in government, the private sector and society at large — have varying degrees of knowledge about the policy and legislative framework affecting their lives. In some cases, the way in which decisions affecting living resources are taken is conditioned more by what the law allows, rather than the nation's or the community's, let alone environment's, best interest. Thus, it is important to assess what laws, regulations and related policy initiatives are in place (including, as appropriate, traditional customs, taboos and sanctions) which might affect the issue being addressed, since a refinement of these may be the most effective solution.

Many environmental issues have come to light so recently that current policies are inadequate to deal with them. Thus, one of the most important target audiences for information are government policy-makers who, amongst other stakeholders, are responsible for reviewing the performance of current policies and preparing strategic plans for the future (Miller and Lanou 1995). Some laws can be so out of date that they positively encourage citizens to damage the environment. A good example is the practice of clearing public land of its vegetation to demonstrate ownership, which is permissible, even encouraged, in some countries through the existence of outmoded economic incentives. Even modern laws may contain unanticipated loopholes which, unless closed, threaten careful living resource planning.

Where formal policy-review mechanisms are in place, it is important to investigate these carefully since they may be operated on tight, inflexible time-scales which must be satisfied. Where no policies exist to address a particular concern, one solution is to identify the decision-making bodies most likely to develop appropriate policies and empower these with relevant information.

3.4 Policy Support

Thus far, the analysis has attempted to reveal stakeholder's goals with respect to an issue; their current use of (and constraints on using) information; and the strengths and weaknesses of existing policies. The next step is for stakeholders to **integrate their various perspectives into a common vision** of the way forward. Clearly, this vision may not suit all stakeholders perfectly, but the aim is to find a policy solution to the issue which combines as many social, economic and environmental goals as feasible, given the diversity of views which exist. A key element of this process is consultation, which can be structured using the tools and methods described in Section 4.

Stakeholders may require specific information to help them cope with the implications of the agreed policy, particularly where they are expected to adopt new working methods or embrace notions of conservation and sustainable use of living resources. Further information may be required to monitor the performance of the policy, and to assist with its progressive review and refinement (see Section 4, Volume 1). To fully define information needs, therefore, it is helpful to ask a final, direct, question of stakeholders:

- **What information do you require to implement, monitor or review the agreed policy?**

  It remains to determine what specific information is needed by whom and in what form to enable stakeholders to implement the policy and ensure that it remains responsive to their needs. The content, complexity, structure, timing and method of delivery of this information all determine the speed with which stakeholders will accommodate the changes required (see Volume 3).

The questions outlined in this section — relating to policy analysis and support — aim to uncover what information is needed to support conservation and sustainable-use goals. The team responsible for undertaking this analysis should consider distributing their findings to stakeholders for review and comment. Once agreement has been reached on information needs, the next step is to design information products and services to meet priority demands (see Volume 3).