Participatory Assessment Monitoring and Evaluation of Biodiversity

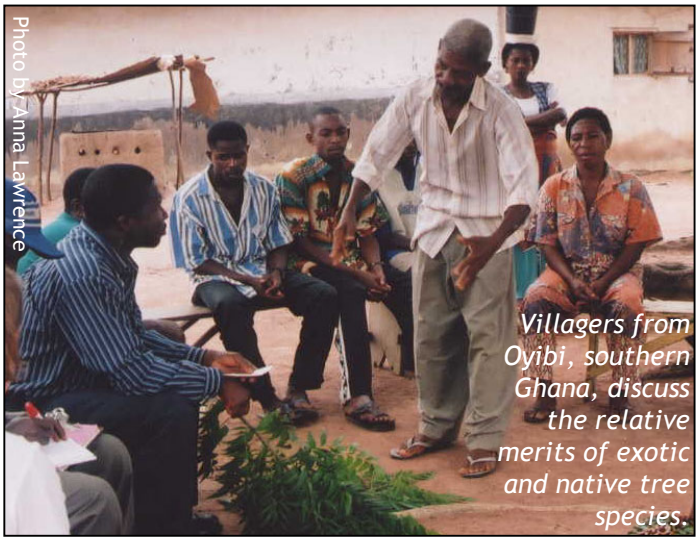
A briefing paper for planners, policy makers and advisers

Introduction

Demands for data on biodiversity are escalating, not only in the wake of international environmental agreements but out of concern to understand the impact of planning and development on the natural environment.

Involving the public, rural land users, or amateur enthusiasts in biodiversity assessment and monitoring is attractive to planners and policy makers, because it can provide them with more information faster; and because it may give democratic legitimacy to the resulting decisions. But there are pitfalls too – accuracy, representativeness, and cost-effectiveness all have to be considered.

In this briefing note we introduce the concept of participatory assessment monitoring and evaluation of biodiversity (PAMEB) and its potential role in local and international environmental governance, and review practical lessons to help planners decide how PAMEB can work for them.



Villagers from Oyibi, southern Ghana, discuss the relative merits of exotic and native tree species.

Homing in: biodiversity and local reality

PAMEB complements formal monitoring and reporting process with spatially-diverse information, relevant to the different needs of the people living within national boundaries.

It can also help national planners to adapt monitoring and reporting (MAR) processes to the reality of location-specific values, and provide a means by which national and international decision-makers can learn from local experience and perceptions of biodiversity, gaining a wealth of information that would be overlooked by more conventional inventory and survey procedures.

The international context

International and national information needs are set by the legal and policy context affecting participatory biodiversity monitoring and evaluation, primarily:

- the **Convention on Biological Diversity** (CBD) (see Box 1);
- the international forest policy dialogue, under the **United Nations Forum on Forests** (UNFF), which encourages voluntary monitoring and reporting (MAR) on forest quantity and quality; and the **National Forest Programmes**, envisaged as holistic, multi-sectoral processes, requiring broad participation at every stage;
- regional agreements such as the **Aarhus Convention** on Access to Information, Public Participation in Decision-making and Access to Justice in Environmental Matters.

Together, they establish rights and responsibilities, as well as processes for national planning, monitoring and reporting.

This meshes with growing concern to link biodiversity management to sustainable livelihoods and poverty reduction, in light of the **Millennium Development Goals** and **national poverty reduction strategies**.

Definitions

Biodiversity encompasses the diversity of life, including genes, species, habitats and the processes linking those components.

Because of the sheer scale of this diversity, and because observations and measurement are affected by human values, it is not possible to measure objectively the whole of biodiversity in any one place.

Scientists therefore use proxy measurements such as species numbers and diversity indices to **assess** how much is there and how important it is; and indicators to **monitor** changes. 'Importance' is a value judgement even amongst scientists.

Participatory processes involve different stakeholders in monitoring or assessing biodiversity; for example in conservation assessments by rural communities, or nature surveys by amateur enthusiasts. Different stakeholders will select different components to assess or monitor (focusing on particular species and habitats), and make different value judgements about what is important. The challenge in participatory biodiversity assessment or monitoring comes from both the diversity, and the legitimacy, of these values and measurements.

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Key lessons

In January 2002, the European Tropical Forest Research Network (ETFRN) hosted an internet conference on Participatory Monitoring and Evaluation of Biodiversity, in which 270 registered participants based in 55 countries brought together their experiences. The conference was followed up in May 2002 with a seminar for policy-makers and implementers. See www.etfrn.org/etfrn/workshop/biodiversity/index.html for case studies and analysis. Based on these experiences, the workshop identified a number of key lessons for increasing the value of PAMEB in meeting national reporting and planning requirements (including participatory natural resource management).

1. What can PAMEB do for environmental governance?

• PAMEB contributes to environmental governance by defining stakeholders' objectives and values in assessing biodiversity, leading to assessments which are relevant to those stakeholders and enabling them to take part in biodiversity management decisions.

• Joint information collection and analysis can enhance trust and communication between local people, scientists and officials.

• Involvement of local stakeholders in these processes can increase their motivation and provide interpretations of data which may have been overlooked by scientists.

• Analysis of data within and by communities enhances ownership of biodiversity data and management, as well as interest in biodiversity, and motivation to conserve.

• PAMEB enables scientists to support local people in managing biodiversity, and can provide a means to convey scientific values to local people.

Gathering local knowledge about forest habitats on Mount Cameroon

2. Working with a diversity of stakeholders

PAMEB covers an enormous range of situations, and it is necessary to define objectives and stakeholders clearly. The methods must be adapted to these in each case, rather than applying a standard procedure to all

Volunteers monitoring mammals in Wytham Wood, Oxfordshire, UK

situations which appear to need a participatory approach. Consequently, relevant stakeholders must be selected on a case-by-case basis.

Different stakeholders represent different culture and knowledge systems, experience different power relations, and value different species, varieties, habitats and processes.

By understanding the values and perspectives of stakeholder-groups, facilitation can help biodiversity specialists increase local participation in PAMEBs, provide benefits for participants and tailor information for environmental decision-makers.

These values can be integrated into a PAMEB through:

• effective two-way communication based on open-mindedness and listening between stakeholders;

• early understanding of the costs and benefits to the different actors in such assessments (avoiding the common problem of underestimating time requirements and under-valuing local people's time);

• analysis and dissemination using methods which are accessible to and usable by all interested parties.

3. Choosing the right indicators

In any biodiversity assessment, it is only possible to measure a subset of biodiversity. Decisions must be made about *which* components are to be measured and what they tell us about the whole (or the part that

we are interested in). This observable subset ofbiodiversity components is usually termed 'indicators', and they are particularly useful in monitoring *changes* in biodiversity.

Measurements by anyone, scientists or otherwise, are affected by values. Different stakeholders have different values, often location-specific, which lead to different biodiversity assessments.

For example, local choice of indicators is likely to be based on species of local importance, often on useful species, whereas scientists are more likely to include globally rare or significant species or habitats.

If indicators are to be used, they must be selected on the basis of clear communication about their purpose, and the reason for their selection. This self-aware and participatory process is likely to lead to indicators which are useful to and communicable between a range of stakeholders.

4. Ensuring that data is reliable and useful

'Reliability' can mean different things to different stakeholders. Scientists require statistically acceptable replication and validation of results, while local forest users will judge reliability in empirical terms – it must reflect their experience.

'Usefulness' also depends on the perspective and objective of the stakeholder. Scientists and policy makers usually want quantitative spatially-comparable data over a regional or national scale, while forest users are usually more interested in location-specific, detailed and sometimes qualitative information.

Local assessments can contribute to the efficiency and usefulness of larger scale biodiversity and landscape assessments, by providing detail which calibrates scientific inventory, pointing out habitats that are not picked up because of the scale of the inventory, or bringing to attention places of special local importance.

Conversely, scientific approaches to sampling can improve the reliability and generalisability of participatory approaches, and can validate local knowledge. They can also help to standardise participatory data collection so that results from different locations can be aggregated at a wider scale. For this, local training will be essential.

However, there is a risk that if data collection procedures are simplified and standardised to make decisions easier, they may overlook local realities and detail, and consequently be misleading for policy-makers and irrelevant or meaningless to local stakeholders. To benefit from the commitment, knowledge and values of local stakeholders, national processes may need to adopt mechanisms to accept and integrate qualitative, spatially-diverse information based on the location specific values of the people living within those national boundaries.

5. An enabling policy context

As with all participatory processes, PAMEB will only make an effective contribution to biodiversity management if institutions can cope with this power shift and overcome traditional constraints to participation.

This will often require changes in scientific training and education, and in institutional networking.

Although successful participation can, in well-funded projects, work at the local level without policy support, wider scale benefits will only be feasible when conditions include:

- sufficient democratic opening and responsiveness for action plans to be respected and supported;
- institutional incentives for staff who work in a participatory way;
- tenure arrangements which make participatory planning relevant to local stakeholders.

A community Forest User Group in Nepal plans an assessment of habitats and species in their community forest

6. Constraints of PAMEB

Expectations of a participatory approach are often high because it is hoped that they will enhance local motivation to conserve resources, or provide faster, cheaper collection of more relevant data, compared with more conventional scientific approaches. However:

- PAMEB can take time, because many of the stakeholders are not used to each others' values and objectives.
- Local people may be reluctant to participate, because of negative preconceptions or experience of outside stakeholders; or because their time is scarce; or because sharing information about species distribution or use might threaten their livelihoods; or

Box 1: Relevant CBD articles

Art. 6(a): Requires the development and implementation of National Biodiversity Strategies and Action Plans (NBSAPs). More than 150 countries are now developing and implementing NBSAPs and Local Biodiversity Action Plans (LBAPs).

Art. 8(j): Requires information on how indigenous and local communities' traditional knowledge, innovations and practices are being respected, preserved and maintained.

Art. 14: Impact assessment procedures require the potential effects of assessable activities on biodiversity to be taken into account.

Art. 26: Requires all parties to report periodically on their implementation of the Convention, and on the status of biodiversity in their countries.

because local survival may depend on illegal use of biodiversity.

• Participation can be exploited as a short cut to outsiders' needs, compromising empowerment and trust building.

Only with appropriate investment in the process of bringing together stakeholders' biodiversity values, can PAMEB bring greater efficiency of data collection and more equitably shared decisions about conservation and use of biodiversity.

Women in the Andean foothills of Bolivia use matrix-scoring to assess species for soil conservation.

Further reading

Lawrence A. (2003) Participatory ecological monitoring in protected areas. In: Jaireth H. and Smyth D. (eds) Innovative Governance: Indigenous Peoples, Local Communities and Protected Areas. IUCN, Gland, Switzerland

UNEP World Conservation Monitoring Centre (2003) Biodiversity assessment and monitoring. Guidance for practitioners. UNEP WCMC, Cambridge, UK.

Vermeulen S. and Koziell I. (2002) Integrating global and local values: a review of biodiversity assessment. IIED, London, UK.

Steps in a PAMEB process

- Define the area or ecosystem to be assessed or monitored.
- Define the stakeholders (e.g. local farmers, amateur naturalists, government wildlife department etc).
- Define the objectives and information needs of each stakeholder.
- Understand the priorities, values and perceptions of each group of stakeholders, in order to understand how this affects their observations and evaluations of biodiversity.
- Assess the compatibility of information needs and values / perceptions of the different stakeholder groups, in order to decide whether stakeholders can work in multidisciplinary teams, or would benefit more from conducting assessments in parallel, with subsequent sharing of results.
- Ask each stakeholder group to select representatives to (a) take part in the data collection; and (b) analysis the results.
- If some stakeholders are undertaking data collection for the benefit of other stakeholders, assess the costs and benefits of participation with them, and ensure those undertaking data collection are motivated and rewarded.
- Within each stakeholder group:
  - Define components of biodiversity to be assessed
  - Set indicators
  - Choose methods and dates for assessing indicators.
- Check plan is possible within available budget.
- Collect data as planned.
- Analyse and share results among the different stakeholders; and communicate results to wider relevant audience.
- Use results to implement management decisions.
- Review process and improve for next cycle.

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