Guides to better livelihoods

Validated RNRRS Output.

To help poor forest users make better use of the resources around them, researchers have worked with local people to produce field guides and create methods for identifying useful local plants. Outputs include policy briefings, a book to teach in-country partners how to produce usable easy-to-understand local field guides and a whole range of field guides suitable for use by local people. These are targeted at different countries, such as Bolivia, Brazil, Peru, Cameroon, Grenada, the West Indies and Ghana. This work has created a popular approach that local people can readily benefit from. Demand for the handbook on field guide preparation is high, and copies have been distributed to at least 15 countries

Project Ref: **FRP37:**
Topic: **4. Better Water Harvesting, Catchment Management & Environments**
Lead Organisation: **University of Oxford, UK**
Source: **Forestry Research Programme**

Document Contents:

Research into Use
NR International
Park House
Bradbourne Lane
Aylesford
Kent
ME20 6SN
UK

Geographical regions included:

Bhutan, Brazil, India, Nepal, Peru,

Target Audiences for this content:

Forest-dependent poor,

Description

FRP37

A. Description of the research output(s)

1. Working title

Development of a global methodology and manual for biodiversity guides suitable for use in rural development

New working title

Participatory assessment, monitoring and evaluation of biodiversity (PAMEB)

2. Name of relevant RNRRS Programme(s) commissioning supporting research and also indicate other funding sources, if applicable.

Forestry Research Programme
Tropenbos (Netherlands)

3. Provide relevant R numbers (and/or programme development/dissemination reference numbers covering supporting research) along with the institutional partners (with individual contact persons (if appropriate)) involved in the project activities. As with the question above, this is primarily to allow for the legacy of the RNRRS to be acknowledged during the RIUP activities.

R7475

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4. Describe the RNRRS output or cluster of outputs being proposed and when was it produced?

The overarching output is a methodology which addresses rural people's need for information about natural resources, in a credible, reliable and usable format. This empowers them to make decisions about, and derive tangible sustainable benefits from, monitoring and management of such resources, including **ecosystem services,** and employment through **ecotourism** and **parataxonomy**.

The outputs that support this are:

A: printed or downloadable materials (full references in Annex 1)

1. Proceedings of internet conference: "**Participatory Assessment Monitoring and Evaluation of Biodiversity** (**PAMEB**)".

Outputs are organised according to:

- **Information needs**
- **Biodiversity values**
- **Participatory methods**
- Case studies
- Enabling factors
- Benefits and pitfalls

These are presented in workshop summaries on the European Tropical Forest Research Network (ETFRN) website http://www.etfrn.org/etfrn/workshop/biodiversity/index.html and on CD ROM.

2. PAMEB policy brief
A briefing paper for planners, **policy makers** and advisors, in **PAMEB.**

3. Handbook for the production of **user-friendly field guides** (Lawrence and Hawthorne, 2006)
A step-by-step guide to empower rural people to conduct and communicate **plant identification.** Detailed instructions enable creation of locally applicable **field guides** which can benefit rural livelihoods and biodiversity, and effectively combine **scientific** and **local knowledge** in an accurate and usable way. Field guide production can also create a marketable skill or product.

4. 'Taking Stock of Nature'. Edited volume (2007) on the policy and planning implications of PAMEB.
See annex 2 for prospectus.

5. Papers and book chapters (see annex 1) which review experience in PAMEB, explore the role of local and **indigenous communities** in **protected area governance** and provide methodological guidelines consistent with the **Ecosystem Approach** of the Biodiversity Convention, to support:
   - Identification of **information needs**
   - Identification of different **biodiversity values**
   - Assessment of existing information, and identification of information gaps
   - Definition of what to measure, and how to measure it
   - Development and implementation of a sampling programme
   - Analysis and presentation of results

B: Training workshops:

1. PAMEB

A two day training package with enables development and conservation practitioners to facilitate the involvement of **poor people** in **protected areas** and **community forests** in planning and management of the **resources** on which their **livelihoods** depend. The workshop includes discussion and practice of **participatory methods**, **data collection**, and **analysis** and **use** of PAMEB results.

2. Producing **user-friendly field guides**

Two-day workshops covering steps for planning, elaboration, content, format, design, writing and validating field guides. These are designed to accompany the handbook.

5. What is the type of output(s) being described here?
Please tick one or more of the following options.

Product	***Technology***	***Service***	***Process or Methodology***	***Policy***	***Other Please specify***
X			*X*		

*6. What is the main **commodity** (ies) upon which the output(s) focussed? Could this output be **applied to other commodities**, if so, please comment*

Any useful component of biodiversity. Biodiversity consists of genes, species and ecosystems, and components can be useful to the rural poor in various ways: direct use, indirect use (ecosystem services) and as values which outsiders are prepared to pay for (beauty, ecotourism, parataxonomy). Consequently the methodology can be applied in a range of contexts, including agricultural, managed forest and protected areas.

7. What production system(s) does/could the output(s) focus upon?
Please tick one or more of the following options. Leave blank if not applicable

Semi-Arid	***High potential***	***Hillsides***	***Forest-Agriculture***	***Peri-urban***	***Land water***	***Tropical moist forest***	***Cross-cutting***
x			*X*			*x*	

8. What farming system(s) does the output(s) focus upon?

Biodiversity occurs within, alongside and outwith all of the farming systems indicated. The methodologies developed here are applicable principally to common property resources, or shared semi-nature resources in which poor people have a management stake.

Smallholder rainfed humid	***Irrigated***	***Wetland rice based***	***Smallholder rainfed highland***	***Smallholder rainfed dry/cold***	***Dualistic***	***Coastal artisanal fishing***

9. How could value be added to the output or additional constraints faced by poor people addressed by clustering this output with research outputs from other sources (RNRRS and non RNRRS)?

Outputs from R7475 could be clustered with the following which are included with the permission of their (former or current) leaders:

R8295: R8295 developed participatory experimental approaches to community forest management. It evolved out of the application of PAMEB methods in situations where communities have the right to manage forest and other common property resources and need to develop adaptive management based on sound information. PAMEB can be used to broaden the ecosystem focus of such experimental approaches. Clustering with this project would be particularly appropriate for meeting the demand from IUCN Asia in regional training workshops which promote and adapt participatory monitoring approaches based on a spectrum from resource assessment, to monitoring of management impacts and proactive experimentation. This would enable the methodologies to be taken up by a range of countries at different stages of policy development.

R7367: The sister project to R7475 which addressed the biological aspects of the handbook, whereas R7475 addressed the social and participatory aspects. Trainings based on the handbook would benefit from a joint approach.

R8305: The network of participants in this project have expressed an interest in increasing their knowledge of other NTFPs in their area. Local people in the Southern African regions, in the production of a field guide to local medicinal plants and NTFPs, could enhance their capacity to manage and use

such produce.

R6918: as PAMEB uptake at the local level relies on high governance capacity within communities, the Participatory Action and Learning (PAL) process is a valuable approach to accompany the more technical aspects of R7475. Clustering with R8295 would also address this need, as it built directly on the methods and partnerships established by R6918.

Validation

B. Validation of the research output(s)

*10. **How** were the output(s) validated and **who** validated them?*

The PAMEB recommendations were validated through:

1. deliberative and extensive discussions during the internet conference, with stakeholders including practitioners, NGOs, GOs, members of cooperatives, and through peer review of summary and book proposals.
2. Involvement of stakeholders from policy and research sectors in policy workshop.

Field guides: testing and validation of both the methods and contents were key strands of the methodology. A whole chapter of the handbook is assigned to testing and draws on the case studies provided by the project. The stakeholders, including rural poor in two of the four field guides, were involved at each stage including scoping, planning, information gathering, format testing, and overall review. This approach is advocated as essential to creating a usable product.

Specific stages included:

1. Participatory appraisal workshops to plan the objectives and content of the guides;
2. Workshops with users to test components and drafts of the guide (including illustrations, keys, information).

Training workshops for field guide production were prepared and tested by project partners with intermediary organisations in each country as a means to testing their inputs to the handbook. By testing the methods with a range of stakeholders (including but not only the poor) we ensured that the final methodology is flexible and can be adapted to a wide range of needs.

*11. **Where and when** have the output(s) been validated?*

The Field Guide Handbook and Training were validated as follows:

In the making of the field guide handbook, outputs were validated during the project with participating communities including:

- Indigenous communities in the Bajo Paragua buffer zone of the Parque Nacional Noel Kempff Mercado (PNNKM), Bolivia;
- Ecotourists seeking to enhance their experience of PNNKM;
- Farmers and extension workers in the extremely poor communities of the serrao and caatinga of Bahia, Brazil – the drought prone areas where cattle farming depends on dry season forage;
- Conservation agencies, NGOs and tourists in the protected (and potentially protected) areas of the caatinga.

Date	Validation Activity	Stakeholders
July 1999	Review of existing field guides	20 NGOs, GOs and universities
November 1999	User review of existing field guides	Community members, Bolivia and Brazil.
August 2001	User workshop to test illustrations	Farmers and agricultural technicians, Brazil
March 2002	User workshop to test keys User workshop to test mock up of field guide	Biologists, agricultural technicians, development workers, Feira de Santana, Brazil Indigenous community members, Bolivia.
May 2002	User workshop to test mock-up of ecotourist and indigenous community guides.	Parque Nacional Noel Kempff Mercado, Brazil.
March 2003	User workshop to test final draft of guide to firage legumes of the Caatinga	farmers and agricultural technicicans, Brazil
April 2003	Training course in user friendly field guide production	NGOs, development workers, conservation workers, Bolivia
April 2003	Project evaluation seminar (comments accounted for in writing of field guides handbook	Project partners, Brazil
May 2003	Training course	NGOs, development workers, conservation workers,, Brazil

The handbook brings together all these experiences and enables NGOs or institutions to repeat the process for the benefit of local communities in any country.

PAMEB was validated as follows:

Date	Validation Activity	Stakeholders
January 2002	Discussions of PAMEB in internet conference	NGOs, GOs, practitioners, policy makers, international conservation agencies
May 2002	PAMEB Policy seminar	Policy makers, senior environmental advisers from 10 countries.

Current Situation

C. Current situation

*12. **How and by whom** are the outputs currently being used? Please give a brief description **(max. 250 words**). **236***

PAMEB process and methodology:

This formed only a small part of the overall project and aimed to coordinate and summarise the experiences of others. Less energy has therefore been invested in promotion, but this component provides the essential context for the field guides work and so is highlighted here. The European Trpical Forest Rsearch Network has continued to make the electronic conference proceedings available through its website and to distribute CD ROMs to practitioners in developing countries. The training workshop was developed for the World Conservation Monitoring Centre, Cambridge, UK, March 2003, and tested with staff of the King Mahendra Trust for Nature Conservation, Nepal. It has been adapted recently for training delivered at the [Natural Resources] Research Centre Jakar, Bhutan, March 2006: to forest extension officers working with Community Forest Management Groups. Findings have also been adapted in India and Nepal with R8295 (June 2003 – March 2006), and through a Darwin Initiative funded project in Peru (September 2004 – September 2007).

The findings are being further analysed in time funded by the leader's institution, to edit the forthcoming collection of PAMEB case studies "Taking Stock of Nature".

The **field guides handbook** has been published internationally by Earthscan, in their popular "People and Plants Conservation Series". Six hundred copies were recently distributed to NGOs and herbaria working directly with poor rural communities in at least 15 countries, with further demand unmet. A recent review for the handbook appearing in the British Ecological Society Bulletin (December 2006) concludes:

> *"Overall, this is an illuminating document that outlines all the possibilities and the pitfalls involved in field guide preparation, and those involved in writing new guides … would also do well to read it."*

*13. **Where** are the outputs currently being used? As with Question 11 please indicate place(s) and countries where the outputs are being used*

Both PAMEB and the field guides handbook are designed to be used to strengthen the capacity of moderate and extreme vulnerable poor in rural (especially forested) locations. Specifically:

PAMEB:

- Countries of those contributing to the internet conference and policy implications workshop; those using the ETFRN website
- India / Nepal in project R8295
- Madre de Dios, Peru in Darwin Initiative funded project supporting indigenous Amazonian groups in producing field guides and managing forest
- Rodna Mountains National Park, Romania in Darwin Initiative funded project to develop PAMEB.

Field Guides:

- Bolivia
- Brazil
- Peru (see above)
- Cameroon
- Grenada, West Indies
- Ghana

14. What is the scale of current use? Indicating how quickly use was established and whether usage is still spreading

The internet conference indicated that in 2002, PAMEB techniques were used in at least 55 countries. However, examples are scattered, and the forthcoming book is intended to make sense of this diversity of experience. PAMEB is an increasingly popular approach as indicated by the recent special issue of Biodiversity and Conservation (Danielsen, Burgess, and Balmford 2005), and usage is spreading fast, though this spread can hardly be attributed to R7475. Nevertheless the high level of participation in the internet conference indicates that it made a contribution to the debate and process.

The policy seminar has created guidelines for uptake as a national tool and method for biodiversity monitoring in line with the CBD, and as a method of increasing the capacity of rural communities, but the extent of use is not monitored.

Demand for the field guides handbook from practitioners is high, and copies have been distributed to at least 15 countries. However, distribution and usage is constrained by funding opportunities.

15. In your experience what programmes, platforms, policy, institutional structures exist that have assisted with the promotion and/or adoption of the output(s) proposed here and in terms of capacity strengthening what do you see as the key facts of success?

The main activities of R7475 took place in Bolivia and Brazil, and relied on local platforms including NGO networks, the Asociacão Plantas do Nordeste alliance between Royal Botanic Gardens Kew, NGOs and Universities in north-east Brazil, and the pioneering government-NGO contract to manage the Noel Kempff Mercado National Park, which provided the conservation NGO Fundación Amigos de la Naturaleza with the incentive to work closely with indigenous people in the buffer zone.

PAMEB is particularly applicable (and beneficial to rural livelihoods) where there exist community forestry programmes or other common property resource management programmes, which both enable communities to know and understand their resource better, and use this knowledge to improve management.

Policies which support promotion therefore include devolved natural resource governance, such as the municipal forest management policy of Bolivia, and the facility to grant tenure of large forest territories to indigenous communities.

At the wider scale the Convention on Biological Diversity and its ecosystem approach provides context by calling for local people to monitor and manage local resources.

Existing institutional channels which benefited promotion include ETFRN's promotion of the electronic conference; IUCN's working group on …; WCMC's willingness to host and partner PAMEB projects, and WWF's People and Plants Conservation Series (which specifically helped in promoting the handbook).

Key factors in success include:

Lead institutions strong in participatory methods and facilitation, and committed to genuine participation by communities;
Established trusting relationships between intermediary and users.
Time dedicated to careful building on working relations;
Clarity of expectations through, for example, a memorandum of understanding.
A funding programme for the production of user-friendly field guides;

- Training courses ensuring uptake at the national level;
- Sufficient autonomy of the user group to manage and benefit from any funds derived from the monitoring and communication activities.

Current Promotion

D. Current promotion/uptake pathways

*16**. Where** is promotion currently taking place? Please indicate for each country specified detail what promotion is taking place, by whom and indicate the scale of current promotion* ***(max 200 words).***

Active promotion ended with project conclusion, apart from the handbook which was published more than a year later. Project partners continue to distribute outputs in Bolivia and Brazil. In particular:

PAMEB
The outputs are available on the ECI website http://www.eci.ox.ac.uk. This component of the project is currently strongly committed to the production of 'Taking Stock of Nature' which is scheduled for publication in June 2007, and will benefit from the publishers' promotion activities. However further financial support will be needed if the publication is to reach those in enabling positions in the selected countries.

Field guides:
The outputs are available on the ECI website http://www.eci.ox.ac.uk. The handbook is benefiting from Earthscan's publicity procedures and specifically in poorer countries from the buy-back arrangement between DFID and WWF which supported the distribution of 600 copies.

17. What are the current barriers preventing or slowing the adoption of the output(s)? Cover here institutional issues, those relating to policy, marketing, infrastructure, social exclusion etc.

Face-to-face interaction is the most effective way of communicating methodological outputs, allowing adaptation of concepts and processes to the experience and context of those responsible in new situations. Consequently the principal barriers are lack of personal contact, cost of published outputs, and the institutional barriers that often confront participatory natural resource management. For participatory methods to be successful, research leaders and field facilitators must be experienced with participatory approaches and communities' livelihood context; policy makers must be prepared to accept results obtained using participatory approaches, and strong intersectoral linkages are needed. Furthermore there is little incentive for local resource users to participate if they lack the means to apply the findings – so situations with weak or unclear tenure constrain uptake.

Disincentives are created through the fact that PAMEB can take time to adjust to mutual values, experiences and objectives. Mutual distrust or communication difficulties are common among the relevant stakeholders. Furthermore there are intellectual property issues, perceived or real: local users may fear that sharing information about species distribution or use could threaten their livelihoods, or that it is in fact illegal.

Finally a participatory process implies a collaboration between different knowledge systems, and the

constraint in the case of PAMEB may be a shortage of scientific expertise. The need for reliable scientific identification of biodiversity is widely noted, but it is poorly funded and numbers of taxonomists are declining.

18. What changes are needed to remove/reduce these barriers to adoption? This section could be used to identify perceived capacity related issues

[see also question 23]

The following address the barriers noted in the previous question:

- training, particularly of trainers, in the context of workshops designed to adapt methods to specific contexts so that options are simplified and recommendations easily recognised as relevant;
- enabling tenure and policy context allowing resulting action plans to be respected and supported
- clarity of intellectual property
- combination of PAMEB with a participatory action learning (PAL) process such as that developed by R6918 and R8295
- allocation of sufficient time
- involvement of biodiversity scientists in participatory processes
- institutional incentives for staff who work in a participatory way.

19. What lessons have you learnt about the best ways to get the outputs used by the largest number of poor people? ***(max 300 words).***

Generic process work best when adapted in a collaborative manner to the context of each situation. Our project compared approaches in Bolivia and Brazil, and built up distinct institutional partnerships and relations with local stakeholders. The outputs draw on the experience of each, and illustrate with examples, but understanding and application are greatly enhanced by direct experience and face-to-face training.

In short, promotion of methodologies rather than specific products, and adaptation to context-specific recommendations, through participatory training of trainers, chosen for their good relations with poor people.

Impacts On Poverty

E. Impacts on poverty to date

20. Where have ***impact studies on poverty in relation to this output or cluster of outputs taken place****? This should include any formal poverty impact studies (and it is appreciated that these will not be commonplace) and any less formal studies including any poverty mapping-type or monitoring work which allow for some analysis on impact on poverty to be made. Details of any cost-benefit analyses may also be detailed at this point. Please list studies here.*

Formal poverty impact assessments are not available for this project. However the relationship between biodiversity and sustainability of rural livelihoods is well-established in the literature (see question 22).

Less well-established, and hence a key message from both this project and R8295, is the link between quality biodiversity information and good environmental governance. In the context of the rural poor, 'quality information' refers to credible and usable information. In other words it is produced according to a process that is reliable and relevant, and in a format that is comprehensible, to the circumstances of the poor. Because of the validation processes used in the participatory approach, this was achieved in the field guides produced through the project; the achievement of similar outputs elsewhere would be dependent on the way in which the methodologies were applied.

21. Based on the evidence in the studies listed above, for each country detail how the poor have benefited from the application and/or adoption of the output(s)

- *What positive impacts on livelihoods have been recorded and over what time period have these impacts been observed? These impacts should be recorded against the capital assets (human, social, natural, physical and, financial) of the livelihoods framework;*

The outputs listed here have been selected for their generic nature, and hence specific poverty impact studies are not available. However evidence from the four case studies of field guide production in Bolivia and Brazil indicate positive impacts on wealth as follows:

Human capital: the project engaged a very wide range of stakeholders in the field guide development process, including indigenous teachers, traditional healers, and schoolchildren. These people remain in the communities and are able to share the skills acquired in plant identification.

Social capital: formal memoranda of agreement were developed through lengthy and culturally sensitive processes in both countries, that led to strong working relationships and new alliances between indigenous people's unions, rural development NGOs and conservation agencies.

Natural capital: a wider range of indigenous leguminous forage species is being tested in Bahia as a result of the field guide production process. Respect for local knowledge of forest species is enhanced in Bajo Paraguá, Bolivia.

Financial capital: six indigenous communities in the buffer zone of the Noel Kempff Mercado National Park (Bolivia) are now earning income from the sale of their field guide.

- *For whom i.e. which type of person (gender, poverty group (see glossary for definitions) has there been a positive impact;*

  In the case of specific field guides and specific examples of PAMEB, both women and men contributed significantly. In several cases women contributed more as they were more accessible during community workshops (for example in Bolivia the indigenous men spend considerable time in logging camps elsewhere).

  The methodological tools produced all advocate attention to diversity of knowledge and livelihood circumstances; the impact depends on the application of the methodology.

- *Indicate the number of people who have realised a positive impact on their livelihood;*

  Again the total number of people affected by the methodological outputs cannot be estimated, since the purpose of the methodology is to stimulate or support a wide range of further projects. We are aware of the uptake and use of the field guides handbook in 15 countries, but as it was published only four months ago we cannot attribute impact at this date.

  Specific impacts of the participatory field guides produced within this project are possible (although extremely approximate). The guide produced with indigenous people in Bolivia is being sold through the indigenous collective, so funds will benefit all six communities (approximately 600 households). Impact of the community guide produced in Bahia Brazil is technical not financial, and we estimate that about 50 households are using a wider range of forage materials, although these changes have only been started in the last year and cannot yet be evaluated.

- *Using whatever appropriate indicator was used detail what was the average percentage increase recorded*

  Not available.

Environmental Impact

H. Environmental impact

24. What are the direct and indirect environmental benefits related to the output(s) and their outcome(s)?

Biodiversity resources are important to the poor not only in terms of their direct "use" value and future "option" values, but also very tangibly in terms of ecosystem services (soil conservation, hydrological regulation) and less tangibly, cultural identity and meaning. This latter group of values contribute to stability, self-esteem and confidence in devolved environmental governance which in turn contribute to increased environmental sustainability.

It is almost tautological to define the environmental benefits of biodiversity. However the term can be used in very different ways, and it is important to consider the effects of conservation of both species and ecosystems. Improved knowledge of, and information about change in, biodiversity enables local resource users (including the moderate and extreme vulnerable poor) to make more informed decisions about its management. The incentive will be most immediate where there is an effect on livelihoods, and the tools provided here can help to add value to biodiversity knowledge such that the connection between conservation and poverty allevation is strengthened.

25. Are there any adverse environmental impacts related to the output(s) and their outcome(s)?

No

26. Do the outputs increase the capacity of poor people to cope with the effects of climate change, reduce the risks of natural disasters and increase their resilience?

Biodiversity is widely and scientifically considered to be integral to the resilience of socioecological systems (Carpenter, Bennett, and Peterson 2006, Walker et al. 2006) . Accurate identification and monitoring are central processes in local institutional strengthening and adaptiveness. PAMEB increases and validates local knowledge of resources and provides the information required for local resource management plans and methods to monitor the effectiveness of management regimes. Biodiversity assessment is not a one-off event, and under the unpredictable conditions of global environmental change it will be essential for local institutions to have the skills in on-going assessments and monitoring, as well as to respond.

Annex

Annex 1: List of outputs with full bibliographic references:

1. Proceedings of internet conference: "Participatory Assessment Monitoring and Evaluation of

Biodiversity (PAMEB)".

Available on the internet:
http://www.etfrn.org/etfrn/workshop/biodiversity/index.html
Introduction
Background paper
Workshop and seminar results
Key themes and discussion results
- Objectives of PAMEB
- Values of biodiversity
- Methods and tools
- Information needs
- Synergy
- Enabling factors
- Wrap-up and ways forward

Downloadable documents
Participants lists
Links to related sites

And

Policy implications of participatory biodiversity assessment, summary report from the one-day seminar, DFID, UK, 31 p.

For a copy of the CD ROM, please contact:
ETFRN
c /o The Tropenbos Foundation
P.O. Box 232
6700 AE Wageningen
The Netherlands
Tel. *31-317-495516
Fax *31-317-495521
etfrn@etfrn.org

2. PAMEB policy brief

- Lawrence, A., A. Wells, S. Gillett, J. van Rijsoort, **PAMEB: a briefing paper for planners, policy makers and advisers**, 2003

Available online at
http://www.frp.uk.com/dissemination_documents/R7475_-_policy_brief_PAMEB.pdf

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3. A handbook for the production of user-friendly field guides (Lawrence and Hawthorne, 2006)

- Lawrence, A., and W. Hawthorne. 2006. *Plant identification: User-friendly field guides for biodiversity management*. London: Earthscan.

Available for purchase through Earthscan and Amazon
http://shop.earthscan.co.uk/ProductDetails/mcs/productID/641
http://www.amazon.com/Plant-Identification-User-Friendly-Biodiversity-Conservation/dp/1844070794

4. Papers and book chapters

- Groombridge B, Jenkins M, Newton A, Vermeulen S, Koziell I, Lawrence A, van Rijsoort J, Lund H G and Singh A, 2004. Biodiversity assessment and monitoring. Guidance for practitioners. UNEP WCMC, UK.

- Lawrence, A. 2003. "Participatory ecological monitoring in protected areas.," in *Innovative Governance: Indigenous Peoples, Local Communities and Protected Areas*. Edited by Jaireth. H. and Smyth. D., pp. 249-267. New Delhi: IUCN / Ane Books.

- Sheil, D., and A. Lawrence. 2004. Tropical biologists, local people and conservation: new opportunities for collaboration. *Trends in Ecology and Evolution* 19:634-638.

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Annex 2. PAMEB book proposal under contract to CUP

Title: **Taking stock of nature: participatory biodiversity assessment for policy planning and practice**

Edited by Anna Lawrence, Environmental Change Institute, University of Oxford
anna.lawrence@eci.ox.ac.uk

To be published by Cambridge University Press

Rationale

1. The book examines experience in biodiversity assessment and monitoring, and the implications for policy makers and planners, given two trends:
    - The increased demand for information
    - The move towards pluralistic environmental management.

2. In the context of these trends, expectations of participatory biodiversity assessment are various, including that it will:
    - help to bridge scales of biodiversity assessment
    - provide more data, more cheaply
    - enhance relevance of such assessments for practical management outcomes
    - motivate participants to conserve as well as use natural resources
    - educate children and others about 'nature'.

3. The theory and practice are therefore tied up with debates about the meaning of both biodiversity, and participation which are therefore addressed in some detail in the introduction.

4. Demand for biodiversity data is increasing sharply for
    - monitoring to demonstrate compliance with international law
    - planning and environmental management (e.g. Environmental Impact Assessments) [cross refer to chapter 2].

5. The 'biodiversity' concept has been with us since 1988, and is attractive for environmental monitoring because it appears to be structured, quantifiable and scientific. But the concept is recognized by scientists as being intangible and subject to much debate. The term originates in, and discourse is dominated by, the conservation ethics of the 'north' (Gaston 1996; Tangwa 1999; Potvin et al. 2002). Within that discourse, its meaning is contested, varying between the descriptive, quantitative, conceptual and normative (Gaston 1996; Perlman & Adelson 1997; Mayer 2006).

6. Moreover, this confusion over meaning is obviously heightened when the multiple stakeholders of a pluralistic approach are involved in defining and measuring.

7. So the question, from the point of view of the planners and policy makers, is how to operationalise a concept when no consensus exists on its definition, nor on how to measure it? The question from the interested citizen's point of view is, what are the objectives of such decision-makers in using the concept, and what are the outcomes of doing so, given the philosophical and practical dilemmas around the concept?

8. The question arises in numerous different contexts. Two areas which appear to be quite distinct from each other in terms of the actors and objectives are voluntary biological monitoring in industrialized countries (weekend birdwatching and the like), and communities in developing countries monitoring 'useful species' in their locality. The two can be contrasted in terms of scale, subset of biodiversity selected for monitoring, methods used, degree of quantification, locus of initiative (who decided to conduct the monitoring) and direction of information flow, as well as immediate economic relevance to the actors.

9. Furthermore the notion of participation itself is subject to multiple understandings. These are often based on an assumed dichotomy between 'top-down' or instrumental approaches, where those in power extract information or labour from more peripheral actors; and 'bottom-up' or transformative approaches where the peripheral actors acquire information, experience and ultimately power for themselves. Participatory biodiversity monitoring is susceptible to criticisms that it is highly extractive, particularly in cases such as parataxonomy where locally knowledgeable forest residents are paid to collect botanical information for analysis and decision-making by others. However my own work shows that this dichotomy is simplistic and many other variables operate, in addition to power (see attached paper currently in press in *Ethics, Place, Environment*).

10. So we have three areas of divergence in understanding of biodiversity:

    - Between theory and pragmatic use of the concept
    - Between different stakeholders and their conceptualisations / definitions of biodiversity
    - Between different social contexts (i.e. including cultural, political, economic).

    All in the context of contested models of participation.

11. This book is based on the premise that by comparing theory and practice in examples bridging the different contexts, we can understand and use the biodiversity concept more effectively, not only in describing the natural world but in understanding our role in it and relationship with it.

12. Fundamentally, because the concept of biodiversity is multi-layered and incorporates values as well as quantities, it represents a framework not only for comparing different assessments of

nature, but also for experiencing one's relationship with nature. The qualitative process of *producing* data is intimately linked to the quantitative *product.*

Approach

13. I explicitly do *not* define biodiversity, therefore, but set out the philosophical issues around its definition and use, as well as the conceptual challenges of participation, as summarised above. I have invited experts from other fields, including international environmental law and environmental psychology, to contribute introductory chapters on the significance and relevance of participatory biodiversity assessment. I then present a series of case studies where researchers and practitioners reflect on their own experiences of working with multiple stakeholders to assess and monitor biodiversity. Such experiences are often highly pragmatic. Those organising them are often aware of the philosophical dilemmas but in facing the realities of their situation develop practical approaches to simplifying the concept of biodiversity and gathering information.

14. I will analyse these case studies in the final chapters, drawing on both the case study authors' own reflections about the choices and consequences of their approach, and the more theoretical issues set out in the opening chapters.

Themes to be developed

15. Each case study author will therefore address the following questions, within a clearly described context:
    - who decided to monitor biodiversity and why
    - who else was involved and why
    - what was done by whom and why (in terms of planning, data collection, analysis, application)
    - what were the outcomes - i.e. what changed in terms of data and its use, decisions made, values and viewpoints of stakeholders, power relations among them.

They will also include a section reflecting on the different interpretations of biodiversity and reasons (conscious or otherwise) for selecting the components of biodiversity including in the monitoring; implications of doing so (whether values changed, whether selected indicators really provide the information needed etc.)

16. This material will allow the discussion and analysis to focus on the following and their implications:
    - the meaning-in-practice of biodiversity to those who have used it in participatory biodiversity assessments, the tensions between stakeholders' own worldviews and their operationalisation of biodiversity, and the ways in which those tensions are resolved or buried;
    - the losses and gains in meaning associated with quantification, increase in scale, and rationalisation of data gathering processes;
    - the objectives and outcomes of participatory biodiversity assessment, in terms of environmental management, decision-making, social and personal change;
    - the power relations involved and any resulting changes;
    - the potential for using the biodiversity concept more openly, as a framework for translating worldviews and for reflexive learning about environmental management.

17. recommendations can be presented according to

a) practical methodological issues (but *not* at micro-level of describing tools or methods themselves)
b) strategies for designing and facilitating participatory biodiversity assessment according to various objectives
c) awareness of the deeper issues - personal development, learning and changing relationship with our social and natural environment.

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