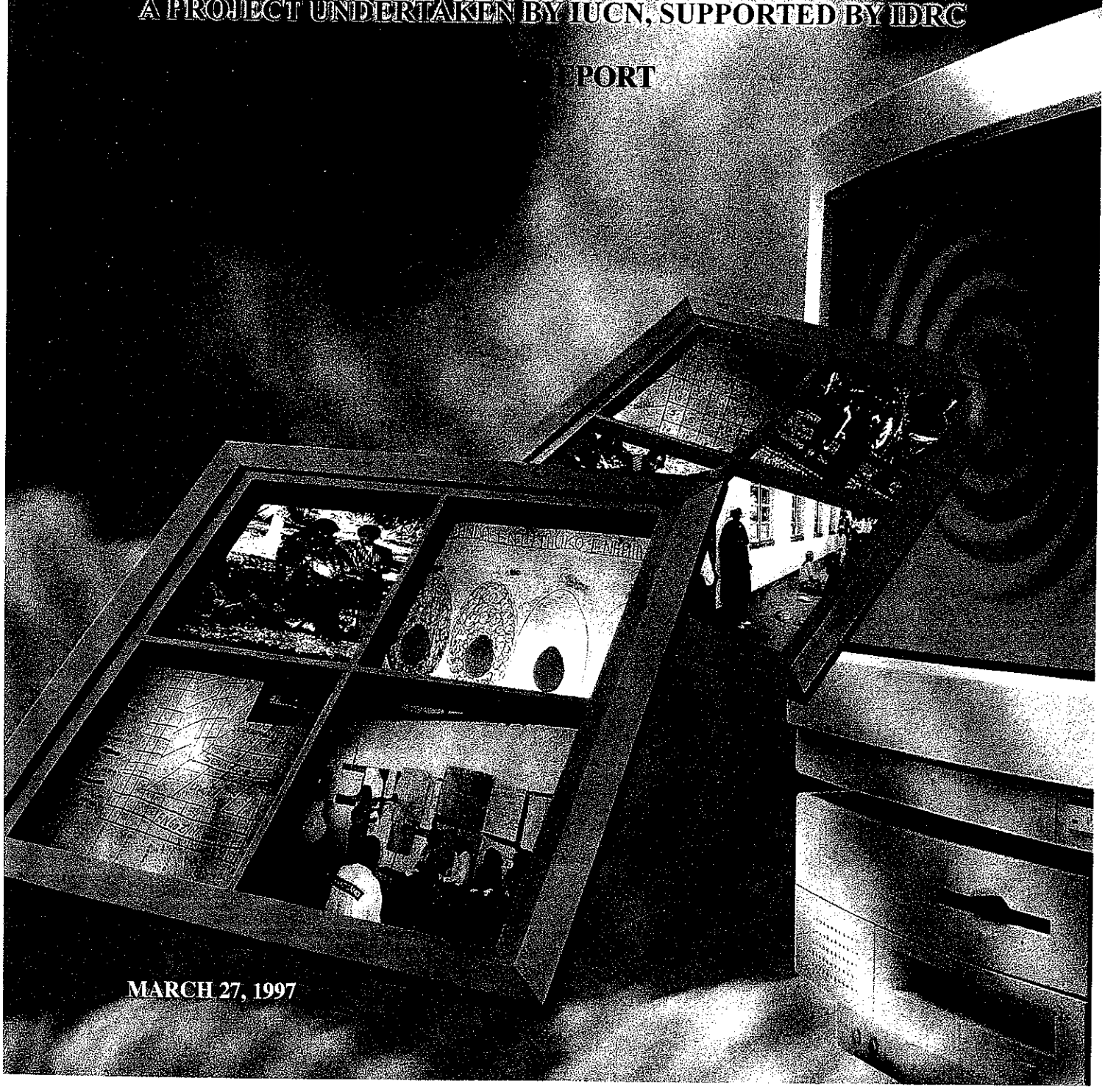
FACULTY OF ENVIRONMENTAL STUDIES
YORK CENTRE FOR APPLIED SUSTAINABILITY

by THE REVIEW TEAM (W. Found, D. Bell,
M. Khalikane, T. Schlichter, R. Schwass,
G. Sohani and P. Victor)

A REVIEW OF "MONITORING AND ASSESSING PROGRESS TOWARD SUSTAINABILITY", A PROJECT UNDERTAKEN BY IUCN, SUPPORTED BY IDRC

REPORT



MARCH 27, 1997

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YORK UNIVERSITY

EXECUTIVE SUMMARY

This report presents a review of the IUCN/IDRC Project on "Monitoring and Assessing Progress Toward Sustainability". The Project, which began formally in 1994, has now ended its first phase. IDRC has agreed to provide funding for a second phase of the Project, and the purpose of this review is to provide observations and conclusions which will be useful in planning subsequent activities.

The Review addresses four major issues: (1) **the conceptual development of the IUCN/IDRC approach** -- the history and the meaning of the concepts, methods, and tools developed during the Project; (2) **field development and assessment** -- the experience in three field sites (Colombia, India, and Zimbabwe) with using and developing the concepts, methods, and tools of assessing progress towards sustainability; (3) **related work** -- the work of other international agencies in assessing progress towards sustainability; and (4) **future applications** -- an assessment of the ways in which the IUCN/IDRC approach could be usefully developed in future work.

The Review Team developed the methodology for its task in consultation with staff of the Evaluation Unit of IDRC and with members of the IUCN International Team, a group of diverse and highly experienced experts assembled to undertake the Project. The most important consultations occurred during the IUCN Congress in Montreal in October, 1996, and during meetings held at York University in February, 1997. Between these dates members of the Review Team conducted site visits in Colombia, India, and Zimbabwe. Each visit involved a team member from York University, at least one team member from the South, and local staff involved in the IUCN/IDRC Project. Information was gathered using a common framework and set of detailed questions for each site. Review activities in Canada focussed on analyzing project files in the IDRC Office in Ottawa, consulting with IDRC staff, and reviewing the work of the many world agencies involved in assessing progress towards sustainability.

Phase I of the IUCN/IDRC Project has produced a useful beginning in developing an alternative international approach to assessing progress towards sustainability. In its report (Assessing Progress Toward Sustainability: Methods and Field Experiences, 1996) and associated booklets, IUCN has articulated an approach which is based on the premise that the world "crisis of unsustainability" is reflected in the dual observations that well-being for all people is not being achieved, and, at the same time, the ecosystem is being degraded and destroyed. "Human behaviour is the main cause of this crisis and the only source of its solution." Central to the IUCN approach is the effort to influence human

behaviour at the local level, as this is a fundamental process and location for taking actions which will lead to sustainability. Human well-being is inextricably tied to the quality or well-being of the ecosystem, and the various Project concepts/metaphors/tools/methods involve the simultaneous consideration of human well-being and ecosystem well-being together. The IUCN/IDRC approach also asserts that human action and reflection should operate in a continuous cycle, within which societies reflect upon the conditions of their people and their ecosystems, and undertake actions to improve them both. The approach, therefore, is systemic, in that it forms a process which is self-generating; and it is user-driven, in that those who are immediately affected by human and ecosystem well-being are active participants in all stages of the reflection-action cycle. The IUCN/IDRC approach reflects current thinking about human-ecosystem relations and about the role of community participation in decision-making; but it develops the concepts and methods in a unique fashion which holds the possibility of broader application. It also begs additional development and refinement.

The Project has presented a number of concepts/metaphors/methods/tools to be used and tested in the three field settings. **The methods/tools have, indeed, proven to be useful in varying degrees in different contexts**; and the greatest successes have been in village-based rural planning in Zimbabwe and in internal agency planning in Colombia. Field activity also suggests the possibility of other successes in the future. **At the same time, while some methods have been "tried out", they have not been thoroughly tested; and future work should concentrate on the continued development of the methods and their underlying concepts. The Project documentation is weak in many cases, and the field experiences need to be systematically used to revise/refine the work, and to place the IUCN/IDRC approach within the broader field of similar work by other agencies.**

Most world-wide attempts to assess progress towards sustainability are based on the "pressure-state-response" (PSR) framework, and focus on the creation of sustainable development indicators (SDI), involving quantitative measures derived from masses of quantitative data at the national level. Creation of the SDIs characteristically involves significant data reduction by experts. The details of SDI construction are, in fact, usually non-accessible by non-experts; and little stake-holder participation is evident in the creation or use of the SDIs. Any vertical integration is normally from the national to international level. A very high degree of horizontal integration is evident, as many countries and agencies have conformed to the general PSR approach. The SDI activity has a strong impact on agencies, given the high degree of conformance and high resource levels dedicated to this work. It is not clear that the indicators have much effect on policy-makers, nor on individuals or groups at the community level. There appears to be little interest in participatory processes or of qualitative research.

The IUCN/IDRC approach stands in stark contrast to the PSR/SDI work, and represents an important, potential complement to it. No single agency or group has developed a grass-roots, reflective approach which has a major international impact. IUCN/IDRC could fill such a gap.

If IUCN/IDRC is to fill this gap -- or even to have a more modest but significant impact on international work -- it needs to undertake certain strategic steps. Perhaps the most important step is to **establish clearly the goal of having a significant international role in sustainability-assessment activity**. While the work to date has been important, it is not particularly well known by other agencies (including other NGOs); and it runs the risk of remaining an interesting but isolated enterprise unless specific efforts are undertaken to place it squarely on the world stage. This will require **much more attention to documentation, some of which must relate the IUCN/IDRC work to the work of others**. It will also require the **strategic selection of partners with whom to undertake joint activities**. Such collaboration could include **joint projects with major agencies involved with PSR/SDI assessments**, projects which could focus on efforts to combine macro-level SDI research with the IUCN/IDRC efforts to develop methods of assessment starting at the grass-roots level. Other collaborative work could involve donor agencies interested in developing sustainability components or standards in projects which they support. Yet another route could be to develop a specific sustainability-assessment role in selected large projects, in addition to the rather limited field projects characteristic of Phase I. NGO activities related to assessing progress towards sustainability have been generally small-scale, isolated from PSR/SDI projects, and rather isolated from each other. **IUCN/IDRC has an opportunity to take the lead in representing the work of NGOs in this area**, which could help to redress the current imbalance in favour of top-down, SDI approaches. All of these examples represent areas where IUCN/IDRC could greatly strengthen its presence and impact.

Phase I of the Project proceeded without any full-time staff fully devoted to the administration, or the conceptual and operational development of the Project. Rather, the Project, administered as part of ongoing responsibilities by IUCN, involved periodic meetings of the International Team, a few national workshops, and the part-time contribution of a variety of international participants. **Phase II of the Project could be greatly strengthened with the addition of a full-time staff member, whose time was completely dedicated to the development of the Project**.

The work of the Review Team involved the taking of videos of some of the field activity, which greatly improved both the documentation and the understanding of Project work. **Video could be used in addition to other forms of**

documentation to greatly enhance the Project's work during Phase II. It could serve, for example, in both vertical and horizontal integration, in that field experiences could be "viewed" by persons or entire communities not able to visit the field sites whose work they might wish to emulate or study. Effective videos could be taken by a range of Project participants who were amateur videographers. On the other hand, professionals could be used to prepare videos for general education or public presentations.

The report which follows includes a main text (pages 1- 47), nine appendices, and a video. It has been prepared so that the reader can appreciate the entire Project review from just the main text. The appendices and the video add additional detail, provide examples of specific items, and generally provide supplementary material.

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March 27, 1997

Introduction

The purpose of this report is to present a review of the IUCN/IDRC Project on "Monitoring and Assessing Progress Toward Sustainability". The Project, which began formally in 1994, has now ended its first phase. The results have been described in a summary document (Assessing Progress Toward Sustainability: Methods and Field Experiences (IUCN, 1996))[1] and in a set of booklets which describe a variety of tools and training materials related to "Assessing Progress Toward Rural Sustainability".[2] IDRC has agreed to provide funding for a second phase of the Project, and the purpose of this review is to provide observations and conclusions from the first phase of the Project which will be useful in planning subsequent activities.

Terms of Reference

The overall emphasis of the assessment is to understand the learning which has emerged through the IUCN/IDRC Project, and what contribution that learning can make to improving capacities to move towards sustainable development. The review centres around four primary components:

A. The conceptual development of the IUCN/IDRC approach. Because the Project is ongoing, and because it is proposed that the strength of the product lies in how it was developed, it is critical for the assessment to understand why and how the conceptual framework came into being, and why and how the tools and methods came into being.

B. Field development and assessment. In order to understand the tools, it is important to understand their development in the field and how they are being used. In particular, the review needs to assess what was done in the field; why and how the tools and methods adapted and changed over the

course of the Project; who was involved and what benefits they perceived; what is continuing in the field sites; human and material costs and benefits associated with the approach; how it is anticipated that the tools and methods will be adapted as they are applied in the near term; and major constraints, opportunities and other issues.

C. Related work. The work of this Project should be placed in the international context. The review should indicate how it compares to other, related assessment work at the micro and macro levels, including, but not limited to, sustainability indicators (CSD, SCOPE, World Bank), State of Environment Reporting/HDI, and conventional monitoring and evaluation systems. What does the Project add to development planning and implementation? What difference does it make and what value does it add? What are the major constraints, opportunities and other issues related to the Project within an international setting?

D. Future applications. Given the understanding which emerges from the above three points, the review should suggest appropriate next steps for the Project, including the most promising directions for development of the work; and identification of the gaps that it is filling; additional or alternative entry points which should be considered; how the major constraints identified in points B and C above can be overcome; and identification of the existing and potential linkages with related initiatives on which future work could be built.

Methodology

The formal methodology used in reviewing the IUCN/IDRC Project is described in Appendix 1. It should be noted, however, that this methodology was not finalized until November 21, 1996, and this formal methodology needs to be described within the context of the more general approach taken by the Review Team.

IDRC first approached the Faculty of Environmental Studies concerning a possible review of the IUCN/IDRC Project through the FES Dean, Peter Victor, in May, 1996. The Faculty, and its associated research centre, The Centre for Applied Sustainability, entered into an agreement to undertake the review later in the month. The nature of the review emerged during a series of meetings involving FES, IDRC, and IUCN.* It was IDRC's original intention that the review be completed by the end of September, 1996. The date for completion and

*The meetings included the following: June 6, 1996 (Ottawa); July 4, 1996 (Ottawa); October 18 & 19, 1996 (Montreal); October 24 & 25, 1996 (Ottawa); and February 3 & 4, 1997 (Toronto).

the nature of the review changed considerably, however, as the complexity of the IUCN/IDRC Project became fully known to the Review Team. The actual work of IUCN turned out to be rather different from that described in its original contract with IDRC. This change, and what was perceived by the Review Team to be a lack of accompanying documentation, led to a series of meetings, negotiations, and extension in the period for the review to March, 1997. This history of the review is important, as it reflects the significant changes which occurred in the IUCN Project throughout its evolution. This evolutionary change is seen by the IUCN International Team as a useful development, and a positive outcome of a reflective attitude (see section below).

An important feature of the review was the decision taken jointly by York University, IDRC, and IUCN to include three professional reviewers from Southern countries in the Review Team. Tomas Schlichter (from Argentina) was identified as a member of the Team at an early stage by IDRC. By October the other members of the Team -- Mangetane Khalikane (from Lesotho), Girish Sohani (from India) and David Bell, Bill Found (Review Project Director), Rodger Schwass, and Peter Victor (all from the Faculty of Environmental Studies, York University) -- were identified. All members of the Review Team met for the first time during meetings at the IUCN Congress in Montreal (October 17-20).

The Review Team, staff members from the Evaluation Unit of IDRC, and the IUCN International Team met during the IUCN Congress in order to develop a better understanding of the IUCN/IDRC Project and its review. A detailed methodology for conducting the remainder of the review was determined, and various parties to the discussions agreed to undertake actions which would make the review as successful and as useful as possible. The Review Team consolidated all of the thinking concerning the Review into a single document (Appendix 1), which was finally approved by IDRC in November.

The methodology for reviewing the IUCN/IDRC Project focuses primarily on two issues: (1) a comparison of the IUCN approach compared with approaches developed by other agencies, and (2) information obtained from field site visits in Colombia, India, and Zimbabwe. In both cases, a specific framework is used for considering efforts to monitor and assess progress towards sustainability (see Figures 1 and 2). Seven parameters are used for considering these approaches: conceptual framework, changes from use of tools and approaches, community involvement, implementation, resource implications (human/material), linkages (vertical/horizontal), and prospects for future applications. The methodology paper provides detailed check-lists which indicate the forms of data to be collected for each parameter.

Information for comparing the IUCN approach with approaches developed by other agencies is obtained, primarily, from published reports and other secondary sources. Ideally, this information identifies the underlying approach of each

agency's conceptual framework, its definition of "sustainability", and its general methodology for making assessments. Data is sought to specify changes from the use of tools and approaches -- the kinds of methods and tools used in assessment, the extent of participatory processes, the extent to which tools and methods have evolved, and an indication of the impacts resulting from the use of the tools and measures. Special attention is paid to identifying community involvement, including the type of "community" which uses the agency's system, how the approach is introduced to the community, and the extent to which community "ownership" of the monitoring and assessment system has developed. Information is sought concerning exactly who uses each agency's approach, who uses the outputs, what records are kept, and how results are communicated -- a set of information related to the implementation of the approach. The resource implications, both human and material, are estimated, including detailed assessments of the human qualifications required, the results on human capacity-building, and all technical requirements.

Information concerning linkages, both vertical and horizontal, is sought, including the extent to which the agency's approach is used at different levels of organization. Similarly, the extent of horizontal expansion of the approach into different settings or different organizations is assessed. Finally, the prospects for future applications are determined, and an assessment made of any special marketing efforts underway to encourage others to adopt the approach.

Information from the Colombia, India, and Zimbabwe field sites is collected for the same seven parameters. In these cases, however, much greater detail is obtained, since Review Team members have an opportunity to visit each site in person. The Team is to determine the "shared understanding" of the IUCN Project's conceptual framework at the local level, and is to determine the extent to which the conceptual framework has been modified by local experiences. Detailed information concerning changes from use of tools and approaches is also obtained. A detailed analysis of the use of each IUCN tool is undertaken in each site, with particular attention to changes in the use of methods/tools which have occurred at the local level. Similarly, the field visits identify any changes that have occurred as a result of the use of the IUCN approach. Community/institutional involvement is assessed by defining the "community" which is involved in the Project, the manner in which the Project was introduced into the community, the forms of community participation, community leadership, and ways in which the Project evolved since its introduction into the community. The extent to which the adoption of the Project's approaches will be sustainable is another matter for assessment. The field visits determine the implementation process by which the IUCN Project has been undertaken. This includes how the organization was originally selected for implementing the Project, the process by which the Project was developed, the forms of communication and record keeping used, the relationship between the Project and other community actions, and the major effects of factors external to the Project on Project activities. A detailed assessment of resource

Figure 1: Framework for Comparing IUCN Approach with Approaches Developed by Other Agencies

MAJOR PARAMETER	APPROACH			
	IUCN	UNEP	WORLD BANK	OTHERS
Conceptual Framework				
Changes from Use of Tools and Approaches				
Community Involvement				
Implementation				
Resource Implications (Human/Material)				
Linkages (Vertical/Horizontal)				
Prospects for Future Applications				

Figure 2: Framework for Comparing IUCN Field Sites in Colombia, India, and Zimbabwe

MAJOR PARAMETER	NATIONAL SITE		
	COLOMBIA	INDIA	ZIMBABWE
Conceptual Framework			
Changes from Use of Tools and Approaches			
Community Involvement			
Implementation			
Resource Implications (Human/Material)			
Linkages (Vertical/Horizontal)			
Prospects for Future Applications			

implications is undertaken, dividing the resources into "human" and "material". Further, the site visit is used to determine the extent to which resources from sources other than IUCN/IDRC have been used for the Project. Detailed information concerning vertical and horizontal linkages is obtained, including detailed analyses of the manner in which the IUCN approach has been integrated at different hierarchical levels, or has been transferred to other sites within the country. Finally, based on information obtained in the field, assessments are made of ways in which the Project's approaches or tools might be utilized or marketed within the country and beyond. Documentation from the field site visits includes not only written reports, but photographs and videos as well.

The information outlined in the check-lists in Appendix 1 is extremely detailed, and represents a data set that would be obtained under ideal circumstances. To obtain all of the listed information, particularly for agencies other than IUCN, would be unusual, and would represent extreme good fortune. Similarly, field sites would have to maintain very detailed records, and abundant time would need to be available, for the Review Team to be able to gather all of the information listed. Nevertheless, the check-lists indicate how the frameworks for comparing the IUCN approach with other agencies and among the three field sites can be used in an operational manner. They list the detailed information which can be used to fully use the frameworks for their intended purposes. Identifying the "ideal" information sets is, therefore, very important, and provides detailed guidance for information-gathering. As will be indicated in the sections below, the Review Team was able to use the framework effectively, and managed to obtain much of the detailed information listed in the check-lists. This was particularly the case for the three field sites.

On February 3-4, 1997, the Review Team met at York University with representatives of IUCN (N. MacPherson and R. Prescott-Allen) and the Evaluation Unit of IDRC (F. Carden, A. Moiseev, and T. Smutylo). The meetings provided an opportunity for the Review Team to present its tentative findings to representatives of IUCN and IDRC. Field notes from the three site visits were circulated before the meeting, and these reports, plus videos from the India and Zimbabwe site visits, were reviewed by all meeting participants. The meetings also provided an opportunity to discuss all other aspects of the review, and permitted the Review Team to meet separately to consider its final conclusions. These conclusions were shared with the rest of the meeting participants during the final session. The meetings were very valuable, as they provided a chance for all participants to share their views about the entire IUCN/IDRC Project. They were also timely, as members of the IUCN International Team were to meet in Ottawa shortly after in order to consider a work plan for Phase II of the Project.

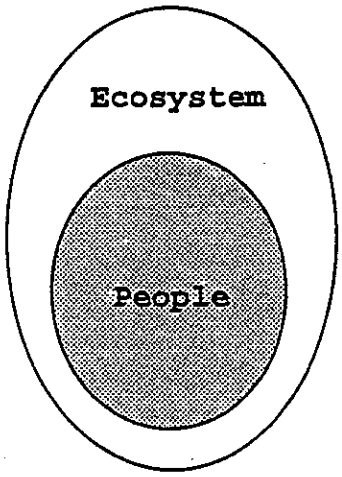
The Conceptual Development of the IUCN Approach

The IUCN Approach

The IUCN approach is based on the premise that the world "crisis of unsustainability" is reflected in the dual observations that well-being for all people is not being achieved, and, at the same time, the ecosystem is being degraded and destroyed. "Human behaviour is the main cause of this crisis and the only source of its solution".[3] Central to the IUCN approach is the effort to influence human behaviour at the local level, as this is a fundamental process and location for taking actions which will lead to sustainability. Also central to the IUCN approach is the concept that human well-being is inextricably tied to the quality or well-being of the ecosystem. "Consequently, sustainability depends on improving and maintaining the well-being of people and the ecosystem together".[4] This emphasis on the interrelated variables of human well-being and ecosystem well-being is simpler than the more commonly-used concept of three overlapping spheres -- economy, society, and environment. The IUCN approach has the advantages of greater simplicity and a clear enunciation of the inter-dependence of human and ecosystem health.

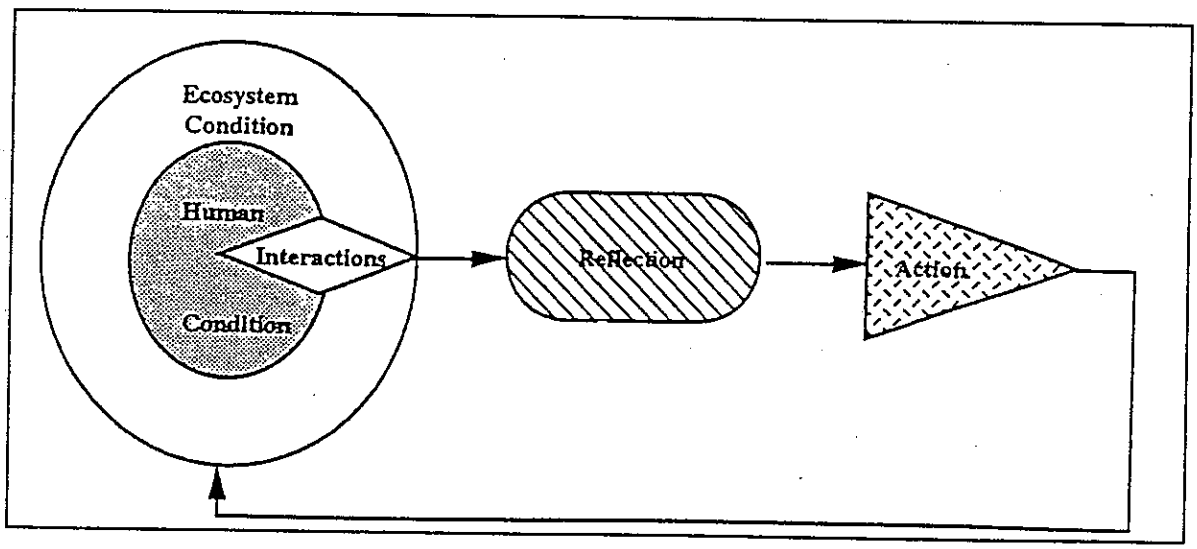
A metaphor used throughout IUCN documentation to describe the interdependence of people and the ecosystem is the "Egg of Sustainability". The diagram displaying this concept is reproduced in Figure 3. It is intended to demonstrate that human societies are an integral part of the surrounding ecosystem, just as the yolk of an egg is dependent for its well-being on the quality of the white of the egg. Both the egg yolk and white can be seen as either "good or improving", or "poor or worsening". This gives rise to four different possibilities or combinations of yolk and white, with the only condition leading to sustainability being the one where both the white and the yolk are good or improving.

Figure 3: The Egg of Sustainability[5]



A second major idea underlying the IUCN approach is that human action and reflection should operate in a continuous cycle, within which societies reflect upon the conditions of their people and their ecosystems, and undertake actions to improve them both. The reflection-action cycle is illustrated in Figure 4, which combines the "Egg" metaphor with the human process which can lead to improvement. Human societies, including those from the grass-roots level to national governments, can undertake appropriate reflection and action if they adopt a "questioning attitude". By asking questions individuals and agencies can begin to determine the well-being of society and its ecosystem, can consider actions which might lead to improvement, and, working with others, can begin to understand the experiences and viewpoints of all stakeholders. The approach, therefore, is systemic, in that it forms a process which is self-generating; and it is user-driven, in that those who are immediately affected by human and ecosystem well-being, and the actions taken to improve them, are active participants in all stages of the reflection-action cycle.

Figure 4: The Reflection-Action Cycle[6]



The IUCN approach is associated with three methods of assessment -- system assessment, which concerns human and ecological systems and their interactions; self-assessment, an internal assessment by an organization or group; and project assessment, an assessment of the implementation and results of a specific project or discreet set of activities. The three types of assessment can complement each other, and a full assessment of progress towards sustainability should ideally include all three types.

The IUCN Project has involved field testing in three locations -- Colombia, Zimbabwe, and India -- where efforts have been made to develop and test these three forms of assessment. The table which summarizes the methods used in each location is reproduced below in Figure 5.

METHODS USED IN	METHODS FOR SYSTEM ASSESSMENT	METHODS FOR SELF ASSESSMENT	METHODS FOR PROJECT ASSESSMENT
COLOMBIA	• Participatory and Reflective Analytical Mapping (PRAM)	• Systematic Analysis of Experience • Development of Reflective Capacity • Institutional Implementation Capacity Assessment	• Logical Framework Analysis (LFA)-based Project Assessment
ZIMBABWE	• Barometer of Sustainability • Assessing and Planning Rural Sustainability		
INDIA	• System Analysis and Planning • Strategic Negotiation for Community Action		

Figure 5: Assessment methods developed and tested in the three project countries (reproduced from Assessing Progress Toward Sustainability: Methods and Field Experiences, IUCN, 1996, page 8).

The detailed descriptions of field experiences in Colombia, Zimbabwe, and India are essential reading for anyone interested in the IUCN/IDRC Project.[7] They provide a succinct yet comprehensive description and analysis of the activities undertaken, and they are candid about the successes and shortcomings of those experiences. They provided the Review Team with an important starting point for undertaking its own field investigations.

The appendices in Assessing Progress Toward Sustainability: Methods and Field Experiences provide descriptions of the various methods of assessment, as follows:

> Methods of System Assessment -- Participatory and Reflective Analytical Mapping (PRAM); Barometer of Sustainability; Assessing and Planning Rural Sustainability; System Analysis and Planning; Strategic Negotiation for Community Action.
>
> Methods of Self-Assessment: Systematic Analysis of Experience; Development of Reflective Capacity; and Institutional Implementation Capacity Assessment.
>
> Method of Project Assessment: Logical Framework Analysis (LFA)-based Project Assessment.

A final section provides a description of the various IUCN booklets[8], visual aids, and Map Maker (a simple computer-based mapping system developed by Eric Dudley).

Historical Development of the IUCN Approach

The IUCN Report[9] provides a straightforward description of the IUCN approach and associated methods, but it gives little indication of the origins of the approach. The Review Team has attempted to understand these origins by examining the IUCN Project files at the IDRC headquarters in Ottawa, by taking part in a number of meetings with various IUCN and IDRC personnel, and by discussing the issue with some members of the International Team. This research has been essential because the IUCN Report divulges very little about the origins of the approach, and does not relate it to other ongoing work undertaken by other agencies. Lack of readily-available documentation about the origins of the IUCN approach, and failure to relate it to similar activities or literature, is a weakness of the Project. On the other hand, it is recognized that serious Project activity did not begin until 1994, and that the Project has evolved substantially throughout its short history.

The IUCN/IDRC Project can be seen, at least in part, as an outgrowth of the Rio Earth Summit (UNCED Conference) of 1992. The period following that Summit has been characterized by a world-wide, accelerated effort to measure sustainability in accordance with Chapter 40, Agenda 21. Particularly prominent has been the development of macro-level indicators of sustainability by large organizations such as UNEP.

The origins of the IUCN approach, however, predate the Rio Summit by many years. Robert Prescott-Allen, in particular, has long been involved within IUCN in a range of activities related to environmental assessment, the creation of indicators of sustainability, and the development of environmental strategies. When, in 1992, the Strategies for Sustainability Programme of IUCN was asked to provide assistance in monitoring and evaluating strategies, R. Prescott-Allen, Nancy MacPherson, and others organized a workshop (December, 1993) at Development Alternatives, an NGO based in New Delhi, India. The Neemrana workshop, supported by IDRC and CIDA, demonstrated the apparent futility of efforts to bring macro-indicators people together with those concerned with strategy development in the quest for monitoring and evaluation related to sustainability. It would appear that the IUCN/IDRC Project was born, at least in part, from the futility and profound problems identified at the Neemrana workshop. An approach was desperately needed to bring together concerns for strategy formulation with efforts to assess sustainability. IUCN was faced with the challenge of communicating with organizations such as the UN Commission on Sustainable Development (CSD), and with articulating its concerns with respect to approaches for assessing sustainability which were exclusively top-down, highly centralized, and based solely on available statistics. A comprehensive, international project was needed where local-level efforts to assess sustainability and to generate strategies could be developed and tested in order to complement the emphasis in so many agencies with assessment based on macro-indicators. Subsequently, IUCN assembled the Project International Team to carry out the Project which had received support from IDRC.

The team members include the following:

- Ashoke Chatterjee, National Institute of Design, India
- Eric Dudley, development consultant, UK
- Tony Hodge, consultant, Canada
- Alejandro Imbach, development consultant, Costa Rica
- Diana Lee-Smith, Mazingira Institute, Kenya
- Adil Najam, Massachusetts Institute of Technology (MIT), USA
- Robert Prescott-Allen, PADATA, Canada

The current addresses of the members of the International Team fail to demonstrate the great wealth of experience by all of the team members. As consultants, members of special groups, researchers, and writers the group is exceptional in its depth of international experience and its range of interests. These include communications, computer applications, state-of-environment reporting, national conservation plans, grass-roots indicators, strategic planning, ecosystem analysis, conflict resolution, specialized theoretical expertise, and others. By assembling a team of this sort, IUCN strove to span the range of

experiences that would be required to develop new approaches that could bridge the widening gaps among those attempting to assess and monitor sustainability.

The International Assessment Team held four meetings prior to its meeting at the IUCN Congress in Montreal, October, 1996: April, 1994 (Ottawa); November, 1994 (Santa Marta); May-June, 1995 (Harare); and January, 1996 (Bangalore). Various members of the Team also participated in regional workshops, and communicated with each other and with IDRC in a series of communications which fill several shelves in the IDRC office.

It would appear that the meetings of the International Team were lively, argumentative, and generally creative. While consensus was sometimes reached on important issues, diversity of opinion and self-criticism were usual. The Project evolved rapidly, yet the Team was fully aware that conceptual and practical development were constantly required. While successes were noted, the satisfaction that comes from stability, consensus, and closure remained elusive. The assertive tone of the IUCN Report[10] masks the dynamism and uncertainty which prevailed in the International Team.

The IUCN approach reflects not only the work of the members of the International Assessment Team, but also contemporary currents in the development of international thought and practice. The emphasis on local, grass-roots participation; on reflection and community empowerment; and on systemic processes have been significant themes within international development for some years. The adaptation of these approaches to sustainability is perhaps best described in the splendid PhD dissertation by R. A. Hodge[11], a member of the International Team. Similarly, the emphasis on viewing human and ecosystem well-being together is a reflection of the holistic thinking which has characterized the treatment of environmental issues over the past several years. Much of the work of the IUCN Team can be seen to reflect important developments in ecology, behaviourism, systems analysis, and planning. It also represents a reaction against the top-down, highly quantitative approach to measuring sustainability taken by several large, international organizations. Project documentation, however, makes little effort to relate the IUCN work to these approaches, either in a general way or through specific references.

The specific methods/tools developed by the International Team represent two different types of origin. The Egg of Sustainability, the Barometer of Sustainability, the Pyramid of Action, and PRAM have been developed by various members of the Team working together. The Egg of Sustainability appears to have emerged in its current form during one of the meetings of the International Team, and it represents an effort to simplify a more complex representation of the relationship between human society and the ecosystem. The origins of the

Barometer of Sustainability are clearly documented in a very useful paper by Robert Prescott-Allen.[12] In this case, the method can be traced partly to earlier work, and partly to research and development (or discussion and development) by specific members of the International Team. Similarly, the Pyramid of Action has roots which pre-date the Project, but it emerged in its current form in response to Project needs. PRAM (Participatory and Reflective Analytical Mapping) was developed during the course of the IUCN Project in Colombia. The other methods and tools associated with the Project (e.g. Map Maker, and the various tools used in assessing progress toward rural sustainability) have been imported from other locations, including the three field sites. The total complex of IUCN methods and tools, therefore, represents both innovation by the members of the International Team, and the use of approaches that have been developed, at least in their current forms, in the field sites.

Ongoing Issues

The IUCN Report makes it clear that the approach and methods of the Project are constantly evolving. This is important, since questions and critical comment surround some of the approaches. The Barometer of Sustainability, for example, is somewhat controversial, and its use has led to some range of opinion in field sites (see section below). Peter Victor, a member of the Review Team, has raised a number of questions about the Barometer (and the Egg) in his discussion paper (Appendix 2). This discussion serves to demonstrate that at least some of the methods and tools are subject to criticism and debate. IUCN readily asserts that its methods and tools continue to require development and testing. R. Prescott-Allen, for example, has continued to modify the Barometer, most recently in response to issues raised by P. Victor. But while specific methods and tools continue to be subject to change, the basic approach adopted by IUCN remains unmodified.

Another area of ongoing concern relates to the degree of abstraction in some of the concepts, metaphors, and diagrams used by IUCN. The Egg of Sustainability, for example, represents a highly simplified version of relationships between human activity and the ecosystem -- relationships which are, in fact, highly complex. An important question concerns the degree to which the important reality in complex systems can survive the very high degree of reduction or simplification inherent in the IUCN modelling. It is understandable that the IUCN Team has attempted to devise models or schematic metaphors which are accessible to large numbers of people at the grass-roots level. One can also understand the inevitable tension that arises when one attempts to devise models which have both general applicability and also the ability to relate to specific contexts. One questions whether the high degree of abstraction necessary for simplicity or general applicability may become misleading in its representation of

reality. This should remain an area of active debate and development as the IUCN Project proceeds into further stages.

A related point concerns the extent to which some of the IUCN models are appropriate for communication or for measurement. This is of particular concern, for example, with respect to the Barometer. As will be demonstrated in subsequent sections, the Barometer has proved to be a very useful communication tool in at least one field setting (Zimbabwe). Villagers have also attempted to use the Barometer for qualitative measurement, and an initial attempt has been made to undertake a more quantitative analysis using the Barometer at the national level.[13] The full extent to which the Barometer, and, perhaps, other tools can be used for quantitative assessment is an important issue.

Field Development and Assessment

The Review Team obtained detailed information concerning field development and assessment primarily through four visits to the field sites: Sierra Nevada de Santa Marta, Colombia (Maria Paez Victor, June 22-29, 1996); (David Bell and Tomas Schlichter, December 2-5, 1996); Zimbabwe (Bill Found, Mangetane Khalikane, and Tomas Schlichter, December 13-19, 1996); and India (Bill Found and Girish Sohani, January 4-11, 1997).* The reports of these site visits are enclosed as Appendices 3A, 3B, 4, and 5, respectively. They contain a wealth of detailed information about IUCN Project activities in each of the three field sites. The two reports on Colombia are quite complementary. M. Paez Victor's report provides a useful, narrative description of the site, the activities of the Fundacion Pro-Sierra Nevada de Santa Marta (FPSN), and an analysis of activities related to the IUCN/IDRC Project. The report by D. Bell and T. Schlichter addresses the points contained in the Review Project Methodology (Appendix 1), a methodology which was developed after the visit by M. Paez Victor. The Bell/Schlichter report also provides valuable information concerning an alternative approach to assessing sustainability -- the approach used by CIAT/UNEP Colombia (D. Bell and T. Schlichter visited the CIAT headquarters in Cali).

The reports from India and Zimbabwe present both a narrative description of the IUCN partners and activities, and provide detailed information in accordance with the Review Methodology. Major conclusions resulting from site visits to Colombia, India, and Zimbabwe are listed in the "Conclusions" section at the end of this report.

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*T. Schlichter also visited the Colombia field site on August 2-5. This was a somewhat informal visit, with no written report. It helped to pave the way for the December visit of T. Schlichter and D. Bell.

The analysis which follows is organized according to the major topics/parameters in the research methodology employed for the review (conceptual framework, changes from use of tools and approaches, etc.). Observations from the three field sites are brought together under each of these topics. An additional, introductory section considers the selection of the three partner agencies in Colombia, India, and Zimbabwe.

Selection of Partners

The three partners which were eventually selected by IUCN represented agencies with ongoing projects which lent themselves more-or-less conveniently to the IUCN Project. They also represented agencies which had had some sort of personal connection with at least one or two members of the International Team; which had relevant on-going, funded activity; where activities were concentrated at the grass-roots level; where a need for assessment was apparent; and where the local organization had the ability to cope effectively with assessment. The Fundacion Pro-Sierra Nevada de Santa Marta (FPSN) was engaged in the development of a conservation strategy for the Sierra Nevada, funded most recently by the German development assistance agency, GTZ. The project, which began in the early 1990s in association with the new IUCN Regional Office for South America, was concentrating on the development of conservation strategies for the region. The project had no specific component dealing with assessment or monitoring, so the IUCN/IDRC Project was able to support the establishment of a Monitoring and Evaluation Unit at FPSN. This would provide for both needed activity within the Fundacion, and for a unit where the approach and activities of the IUCN/IDRC Project could be tried and tested within a fascinating and hard-pressed ecological zone in Colombia.

Development Alternatives has been IUCN's major ongoing partner in India (IUCN has no regional office in the country). It was engaged in a very large project which also lent itself to the purposes of the IUCN/IDRC Project. It was working in the Tumkur District (Karnataka State) in the Government of India-sponsored Integrated Mission for Sustainable Development (IMSD). IMSD, relying in part on sophisticated mapping of natural resources and land use based on Indian satellite data, provided a "good fit" with the IUCN/IDRC Project, as DA was attempting to involve local communities in grass-roots-level environmental planning. A decision in 1992 by the Government of India to decentralize planning efforts, and to give much greater authority to decision-making at the level of local gram panchayats, provided a strong impetus for the development of locally-based planning activity.

In Zimbabwe the local partner, the Department of Natural Resources in the

Ministry of Environment and Tourism, was engaged in an ambitious programme to help local districts prepare District Environmental Action Plans (DEAP). As in India, the Government of Zimbabwe had recently emphasized decision-making at the level of local districts, and the Department of Natural Resources was able to work with the IUCN/IDRC Team to develop methods and tools which would help with the DEAP process at local levels. As in Colombia and India, the activity in Zimbabwe had the advantage of involving considerable support from another funding source, UNDP in this case.

Conceptual Framework

The most striking features of the conceptual frameworks evident in Colombia, India, and Zimbabwe are an emphasis on reflection and on the need to develop grass-roots planning capability through local empowerment. The local identification with the IUCN approach is perhaps the strongest in Zimbabwe, where the emphasis on systemic, user-driven assessment and planning capability is closely combined with a holistic approach which emphasizes the close interrelationships between human and ecosystem well-being. During the visit of the Review Team local leaders indicated their strong concurrence with the approach expressed by IUCN.

The FPSN in Colombia is particularly concerned with reflection, and the importance of having institutions carefully assess their own needs and the needs of the region before proceeding too quickly with administrative arrangements or the creation of specific plans. Leaders in the Fundacion indicate that the IUCN approach has been significantly modified for their own purposes in order to provide for a particular focus on the re-structuring of their own institution.

Development Alternatives (DA) in India has concentrated on the assessment of local needs at the level of the gram panchayat, with an emphasis on methods to resolve different viewpoints within local groups. DA has an ongoing concern with good environmental management, and promotes efforts to improve regional sustainability in many of its projects. Its work with IUCN, however, appears to concentrate primarily on local-level decision making. While it may share the general approach of IUCN, this explicit recognition appears to be less strong than in the other two field sites.

It is noteworthy that none of the participants in the three field sites is particularly occupied with defining "sustainability". Participants in Colombia consider sustainability to be both an elusive term and an elusive feature to document. Their concern is with establishing practices that will help the region and institutions to plan in directions which are more sustainable. Sustainability was barely mentioned in Zimbabwe, although, when pressed, team leaders indicated

their appreciation for and concurrence with the definition normally used by the World Commission on Environment and Development. Again, the emphasis is on encouraging local communities to plan in directions where humans and the ecosystem become more mutually supportable. Sustainability as a simply-stated goal is not particularly apparent. At the meeting of the gram panchayat attended by the Review Team in India, villagers discussed "sustainability" only when hard-pressed. Their concerns appeared to be much more immediate, and concentrated on the provision of funding and water supply.

The conceptual framework evident in the three field sites is generally similar to the approach expressed by IUCN. IUCN, too, is less concerned with simple notions of "sustainability" and the compilation of associated indicators than with the fundamental need for reflection and assessment at appropriate levels, and with promoting progress towards sustainability through field projects. Community participation and empowerment, and the associated creation of systemic processes for assessment and planning, are the hallmarks of the IUCN approach.

Changes from Use of Tools and Approaches

None of the Project field sites had well-developed or explicit concepts/tools/indicators related to sustainability before the beginning of the IUCN/IDRC Project. All of the partners were engaged in activities generally related to conservation, wise environmental management, and community well-being; but the previous activities tended to be either very specific and technology-oriented (e.g. tree-planting in the Tumkur region), or poorly-developed planning projects which required significant help and stimulation. Little explicit attention to monitoring and assessment was apparent. At the same time, villagers within the sites were part of old cultures which had developed a series of local myths, linguistic terms, or agricultural practices which could be seen to reflect systems for long-term environmental management which had evolved over time. The site visits to Colombia did not delve into these issues. In Zimbabwe and India, however, interviews with team leaders did reveal the existence of local systems of indigenous knowledge which could be investigated, but which had not been systematically examined through the Project.

The IUCN Project tools and approaches vary considerably among the three field sites. Table 5 indicates the methods reported in the IUCN Project Report, and the Review Team found at least some reference to each of these tools during their site visits. In Colombia local leaders emphasized the importance of the development of reflective capacity, and the application of reflection, assessment, and planning to the institution of the Fundacion itself. The FPSN had undergone rapid expansion, and it had experienced significant internal difficulties in its organization. The major function of the IUCN-sponsored Monitoring and

Evaluation Unit was to assist the FPSN in a self-examination, and in the undertaking of adjustments to better suit its needs. IUCN approaches and tools were not applied to the immediate needs of the local communities in the Santa Marta region. The other method of primary interest was Participatory and Reflective Analytical Mapping (PRAM), which, although not tested in the region, shows much promise for future use. PRAM has undergone preliminary, successful testing in Guatemala.

In Zimbabwe, the Barometer of Sustainability, the Pyramid of Action, the Egg of Sustainability, and the many steps and procedures associated with Assessing and Planning Rural Sustainability have all been prominent in DEAP endeavours. More than any of the site locations, Zimbabwe illustrates clearly much of the thinking, documentation, and specific methods articulated in IUCN documents.

The tie-in to the IUCN/IDRC Project is much less clear in India. During the site visit reference was made to System Analysis and Planning and to Strategic Negotiation for Community Action, but no documentation other than the formal papers prepared for publication by IUCN were available. At the meeting of the gram panchayat attended by the Review-Team members it was difficult to discern the importance of either of these methods, or of the use of other IUCN methods/tools which were displayed on the walls (i.e. the Barometer, the Egg, and an upside-down Pyramid).

The question of discerning local adaptation in the use of IUCN tools, or the creation of new approaches/tools, is difficult to address, since some of the approaches developed within the national sites have become absorbed into the IUCN collection. PRAM (known locally as MARPS) is a method developed in the IUCN Project in Colombia, and has been added to the IUCN collection of approaches. Strategic Negotiation for Community Action (India) and Assessing and Planning Rural Sustainability (Zimbabwe) have been developed primarily at the local level, drawing heavily on methods used in other settings; but they have been integrated within the overall IUCN constellation of methods. On a more specific level, the River Game, which has proven to have great value in Zimbabwe, is a specific local addition to the general process of rural assessment and planning using participatory methods. Methods which are centrally derived from IUCN (the Egg, the Barometer, and the Pyramid) have undergone significant local modification, and this modification has varied somewhat from region to region (e.g. among different villages in Zimbabwe). The changes have included the number of points on each axis of the Barometer, the colours of the Egg yolk and white, and, in the case of India, the replacement of an "egg" with rectilinear figures.

Indicators of sustainability have not been developed in any of the three field sites.

In Colombia and Zimbabwe this is considered to be "premature". At the same time, "indicators" have been developed at the level of the village and ward in Zimbabwe as a basis for monitoring the progress of specific projects identified in action plans. Project leaders in India indicate that "water" is a sustainability indicator for Project work, but the specific conversion of "water" as a general category into quantitative or qualitative indicators does not appear to have taken place.

The use of the concepts and tools developed by the IUCN/IDRC Project has had varying impacts among the three national sites. In Colombia institutional assessment has clearly had a positive impact on the Fundacion. Map Maker has also had some use, and has demonstrated its utility as a communications and measurement tool for regional planning. Researchers at CIAT appeared to know little about the IUCN Project.

The IUCN/IDRC Project has had a significantly greater impact in Zimbabwe. The Project began at a critical time in the development of DEAP, and the IUCN approach (which is also the DEAP approach) has been very effective in the development of assessments and plans at the village and ward level. Specific projects emanating from the participatory planning process have begun to be implemented (and are receiving funding). The DEAP/IUCN approach is becoming well known by ministries other than Environment and Tourism, by a number of specific programmes (e.g. CAMPFIRE), and by other agencies. The DEAP/IUCN approach has begun to make some real difference in planning and the consequent allocation of resources; and its popularity and impact would appear to be growing.

In the Tumkur District, India the IUCN/IDRC approach and tools appear to have played some role in DA's activities associated with the Integrated Mission for Sustainable Development (IMSD). One suspects, on the basis of the site visit, that the impact has been rather limited, but this is difficult to judge in the absence of much documentation.

Community/Institutional Involvement

Within the FPSN in Colombia the goal of the first phase of the IUCN Project has been to develop assessment tools within the institution itself. The establishment of the Monitoring and Evaluation Unit was not initially a popular move, as members of FPSN felt threatened by the possibility of some group evaluating their work. As time passed, however, it appears that the benefits of self-assessment have been broadly appreciated. Internal problems within FPSN, however, are still apparent. FPSN intends to apply and test assessment methods in rural communities in future stages of the Project.

Several "communities" are associated with the DEAP/IUCN Project in Zimbabwe, and the report of the site visit (Appendix 5) includes an assessment of communities at four levels -- the village, the ward, the district, and the nation. The Project was introduced at the national level, part of a wide-spread effort to create District Environmental Action Plans. The Project quickly spread down to the district and village levels, however, since it was aimed at the creation of assessments and action plans beginning at the level of individual villages. Village assessments and plans, in turn, were aggregated into plans at the ward level. District-level plans have not been developed as yet, but District Strategy Committees, composed of people from a variety of backgrounds within individual districts, have played a very important part in the DEAP process. Participation has involved people at all levels, ranging from the Director of the Department of Natural Resources, through to the DEAP Technical Advisor (the person primarily responsible for the Project), senior officials at the district level (e.g. the Chief Executive Officer from Umzingwange District), ward councillors, and local chiefs. Many individual villagers have also been involved, either as members of village project teams, or as participants in village meetings. Leaders at the local level have included those with traditional roles of leadership (e.g. Chiefs), and also some who have been recruited or self-selected for the Project (e.g. those who are particularly energetic and interested in community participation). Local and district teams appear to have a very high sense of "ownership" of the DEAP process, and many villagers have been genuinely "empowered" in the process of assessment and planning. While the entire process is still in its early stages, one suspects that it is somewhat irreversible, and sustainable so long as funding is available to support badly-needed projects.

The "communities" involved with the IUCN/IDRC Project in India are a selection of gram panchayats in Tumkur District. The gram panchayats are normally composed of about fifty members, selected as representatives by local villagers. The IUCN/IDRC Project, therefore, took place within an existing community structure. The gram panchayats have a strong sense of local ownership of the planning process. One suspects that the sense of local responsibility is related to the changed role of the gram panchayat within India, and has rather little to do with the IUCN/IDRC Project. Local decision making appears to be sustainable and "here to stay" so long as Indian law and practice remain unchanged. The system will continue to be a reliable vehicle for planning exercises that can effectively support local participation.

Implementation

In Colombia the implementing agency is the Fundacion itself, although the effort is concentrated in the Monitoring and Evaluation Unit. Careful documentation, in

the form of written reports, meeting minutes, etc., has been maintained, so that the process of institutional assessment can be carefully monitored. The language used is Spanish. It is noteworthy that none of the Fundacion staff speak the Indian language of local inhabitants in the Sierra Madre de Santa Marta.

In Zimbabwe the project leader is clearly the DEAP/IUCN Technical Advisor, Sam Chimbuya. He is the principle trainer, motivator, and leader throughout the country. Through extensive training members of the DEAP National Team are well-informed about the Project, and can play a leadership role themselves at district and village levels. Project success is also dependent on the creation of DEAP teams at the district and village level, and there is sufficient overlap in these memberships to ensure a broad experience with the DEAP process. Members of the national and district teams include a number of representatives from the Department of Natural Resources, but also representatives from several other ministries (e.g. Agritex) and agencies. Incentives are maintained for DEAP participants at all levels, and these include per-diem payments for team members, and food for village participants. Another important incentive for the entire process is the potential funding for high-priority projects identified by villages and wards. These projects can be funded by decision of elected District Councils. A critically important aspect of the implementation process is that local planning is aggregated to the level of the ward, the smallest spatial unit with elected councillors at the District level. The entire DEAP process, therefore, is appropriately nested within the legal, political, and allocative system of the country.

Similarly, the IUCN/IDRC Project in India is concentrated at the level of the gram panchayat, which now has the authority for planning and decision making at the grass-roots level. The Project is led and administered by the Director of the DA office in Bangalore, with the assistance of well-trained staff members at the DA office in Tumkur. As stated above, it is difficult to assess the real impact of the IUCN/IDRC Project on planning and project identification. In the absence of written reports, one is uncertain about any significant impacts.

Resource Implications

The human resources and training required for the IUCN/IDRC Project vary greatly among the three field sites. By far the greatest human resource requirement has been in Zimbabwe, where the training and meetings required for the production of a single village action plan require over five hundred person-days, at a cost of approximately $10,000 US. Several individuals from the National, District, and local project teams are required for each village plan, and the production of an action plan requires two intensive village "visits" of six days each. In addition, members of the National and District teams undergo several

days of intensive training, and meet at least monthly to consider assessments and plans generated at the village level. It is impossible, of course, to identify the precise proportion of this activity which is associated with the IUCN methods and tools, since they are thoroughly embedded in the entire DEAP process. Members of the IUCN International Team have also played an important role in Zimbabwe, through visits, special studies (e.g. preparation of the national "Barometer" study[14]) and regional workshops. The approaches and tools have been assimilated by "non-experts" at several levels, but have been used most effectively by those who are literate, the young, and those particularly interested in public participation. The special skills developed as a result of the Project include the conducting of meetings which encourage broad participation, the use of a range of methods for Participatory Rural Appraisal (PRA), and particular use of the Egg, the Barometer, and the Pyramid. The Project has contributed very significantly to capacity-building within the community -- through the establishment of procedures by which broad participation takes place, and through the practice of preparing careful documentation (e.g. maps, diagrams, written reports). The DEAP/IUCN Technical Advisor believes that additional human resources would not have been helpful to date, since it has been important to develop the Project in a very limited number of locations. Further developments (e.g. at the level of the Province) could involve the need for very significant additions in human resources. Most of the funding to support Project activities within Zimbabwe has come from UNDP, which contracted with the local IUCN Office for the development of the DEAP process.

The human resources involved with the Project in Colombia and India are much less than in Zimbabwe, because Project activities have been much more limited and focussed. The Project has supported the two staff members of the Monitoring and Evaluation Unit in FPSN, Colombia; and members of the IUCN International Team have provided important inputs and leadership in the work of the Fundacion. Project leaders believe that the IUCN/IDRC Project has helped enable members of the FPSN to "spatialize" knowledge through their experience with PRAM and Map Maker. They also believe that FPSN has been able to re-engineer itself through the process of reflection and institutional assessment. The monitoring and evaluation work of FPSN has not received support from any agencies other than IUCN/IDRC.

In India the IUCN/IDRC Project work is integrated into DA's ongoing work with IMSD, so it is not possible to clearly distinguish the human resource requirements for employing the IUCN approach. The DA staff in Tumkur take intensive training (with the Institute for Youth and Development, for example), training which enables them to work effectively within the gram panchayats. It would appear, however, that little formal training has been devoted to the IUCN Project. It is also not clear how much the IUCN approach has been absorbed by local

people, "expert" or not. The Director of the Bangalore DA office is fully aware of the IUCN approaches, and can articulate their meaning and uses very clearly. How much of this expertise has been absorbed at the village level is not known.

Material resources for employing the IUCN approaches and tools include cars or trucks for transportation, computers, photocopying machines, paper, flip-charts, flip-chart stands, and marking pens. Space for various meetings is also an important requirement. In all three sites the bulk of these material requirements are provided by the agencies involved in the Project. For example, local administrative offices are used for photocopying, and local-agency vehicles are used for transportation. The IUCN Project has provided computers and cameras to local project directors.

Linkages

Vertical linkages for the IUCN/IDRC Project have not been well developed in any of the field sites. It can certainly be argued that the first phase of the Project has been concerned with the initial introduction and use of approaches in specific locations, and that one should not have expected much vertical integration as yet.

The advantages of institutional assessment within FPSN in Colombia have been appreciated by the Fundacion staff; and they believe that the approach could be attractive to agencies at other levels.

In Zimbabwe, where the Review Team was able to complete analyses of the Project at four different levels, a degree of vertical integration has begun to occur. Assessments and plans at the village level have been aggregated, with suitable modification, to produce assessments and plans at the ward level. District plans have not been prepared as yet, and very considerable modifications would be required before aggregation to this level could occur. At the same time, the District Strategy Teams play a very active role in the overall DEAP process. Integration at the level of the Province has not occurred. At the national level, the DEAP programme is becoming well known, and has been mentioned, for example, by the President in a recent speech. Linkages to the national level have been developed indirectly, as first-hand knowledge about village and ward-level planning has become known to officials from various ministries and other agencies within the district. These persons, in turn, have informed their national headquarters about the successes of DEAP. This spontaneous, unplanned linking, first horizontally at the district level and then vertically to the national level, is an important indication of the success and visibility of DEAP. Spontaneous vertical integration in this manner is much preferable to forced integration which proceeds too quickly before proper testing and development has been completed.

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In India, the planning process at the level of the gram panchayat has not occurred in similar fashion at the level of the Taluk or District. Officials at these levels, apparently, have some fear of the possible impacts of such a participatory process. At the national level, one suspects that the IUCN/IDRC Project is not well known. Even within Development Alternatives it appears to be seen as a minor "add-on" to IMSD.

Horizontal linkages are becoming well developed in Zimbabwe. The DEAP process has been introduced into five districts, six wards, and twenty-four villages. Horizontal integration occurs through the actions of the National Team, the District Teams, and the Ward/Village Teams. Horizontal integration has been an objective from the beginning of the Project. Given the very significant human resources and time required for the preparation of assessments and actions plans, Zimbabwe officials have tried to concentrate DEAP efforts in a limited number of locations. In the horizontal integration which has occurred, some villages have proven to be very good locations for DEAP, and others have been less appropriate (e.g. locations where villagers are non-cooperative, or primarily concerned with issues not addressed by the Project (e.g. land reform)). Recently, suggestions have been made in Zimbabwe that the DEAP process might be transferred to other programmes (e.g. CAMPFIRE).

In India, five gram panchayats within Chiknayakanhalli Taluk have participated in the IUCN/IDRC Project. DA believes that several of the other twenty-three gram panchayats in the Taluk could become involved with appropriate prodding and example. They also believe that four or five of the gram panchayats offer little potential for effective action planning. DA indicates that the results of the Project in any one gram panchayat are diffused to others through DA staff and through a number of informal linkages.

In Colombia, the IUCN approach to institutional assessment has spread to Asosierra, an association of the heads of local municipalities. It is believed that PRAM has the potential for use in other locations once it is properly developed and tested.

Related Work

The UNCED conference of 1992 marked the beginning of a new era in monitoring progress toward sustainable development, with UNCED's endorsement and promotion of sustainability indicator development in chapter 40 Agenda 21. Although work on sustainable development indicator (SDI) sets pre-dates UNCED, particularly in the developed countries of the North, one of UNCED's effects was to spur international work on indicator development, with reference to

the state of the environment in Southern countries as well a those in the North. While the IUCN/IDRC Project does not conform to the emerging SDI format, its origins can be related to the UNCED conference of 1992, and its approach and activity can be analyzed within the context of the predominant, SDI approach.*

Conceptual Frameworks

Most activity related to monitoring progress towards sustainability has been undertaken by large agencies, including several in the United Nations, the World Bank, and OECD. They all tend to involve the "pressure-state-response (PSR)" framework.

> This model is based on a concept of causality: human activities exert *pressures* on the environment and change its quality and the quantity of nature resources (its *state*). Societal response to these changes is through environmental, general economic and sectoral policies (*response*). The latter form a feedback loop back to "pressure" through human activities.[15]

In a wider sense, these steps form part of an environmental (policy) cycle which includes problem perception, policy formulation, monitoring and policy evaluation. The PSR framework was originally designed to use environmental indicators, but could also be extended to cover social and economic realms as well.

Definition of Sustainability

The definitions of sustainability used by organizations employing the PSR framework show a relative homogeneity, and the majority echo the sentiments of the 1987 World Commission on Environment and Development, which defined

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*Work related to the IUCN/IDRC Project is assessed in detail in Appendices 6, 7, and 8 (three studies by Sherrill Johnson), and in Appendix 9, an analysis by Rodger Schwass. Appendix 6 is an overview of current thinking concerning sustainability indicators, and covers both the mainstream, top-down work of large agencies and the more diffuse grass-roots work of a range of smaller agencies. Appendix 7 is an associated annotated bibliography. Appendix 8 undertakes a detailed analysis of efforts to monitor progress toward sustainability by UNDP, UNEP, DPCSD, CSD, UNSTAT, the World Bank, OECD, WRI, IISD, and SCOPE. Appendix 9 compares the current IUCN/IDRC approach not only with those of other agencies, but with previous IUCN efforts to monitor and promote wise resource use. It also highlights the importance of private-sector activity related to monitoring sustainability during the past several years.

sustainable development as that which "meets the needs of the present without compromising the ability of future generations to meet their own needs". Many SDI documents do not even provide an explicit definition of sustainability, probably indicating that a working consensus on the meaning of the term exists.

Methodology (Type And Use Of Data, Methods Of Reaching Conclusions, Participatory Features)

While there is a great deal of information available on the conceptual frameworks employed in SDI development, there is unfortunately far less information provided about the data sources and analytical methodologies used in the development of indicator sets. Data sets are seldom discussed, but almost all (if not all) indicators and indices appear to result from the statistical analysis of quantitative data collected/available at either the national or international level. Much of the primary data appears to be gathered from data sets compiled by UN and other international agencies, as well as from country-level data sets.

Several organizations are using a three-step approach, using primary data to develop indicators, which are then aggregated into a smaller number of indices. The purpose of this aggregation is to simplify the amount and complexity of data involved, and to highlight key environmental concerns.

The potential use and/or importance of qualitative data collection and analysis techniques is seldom addressed. Nor is there much mention of using qualitative research methods to substantiate or enrich the quantitative conclusions reached. Issues most likely addressed by qualitative research methods (e.g. cultural specificity, grassroots interpretation of data, local priorities, etc.) are not mentioned in the work of the major organizations which are developing sustainability indicators.

No participatory features are noted in any of the approaches being developed by major international organizations.

Specific Tools and Methods Used

Discussion papers on SDI development provide little data as to the specific tools and methods used by different organizations. It is clear, however, that the overall approach is quantitative and top-down. Data collection and analysis are completely expert-driven, and validation of results is expert-driven as well. Data and results are used and produced at the national and international levels, with little reference to the relevance of indicators at sub-national levels.

Extent of Participatory Processes and Accessibility by/to Non-Experts

There is little evidence of participatory processes in the work of agencies pursuing SDI development. Participation is mentioned only rarely, and then refers to the participation of high-level policy makers or representatives of national governments and/or NGOs in SDI work.

The processes employed in SDI development would not likely be accessible to non-experts, even those in a number of academic fields. SDI research and action is led primarily by experts with backgrounds in the natural sciences, mathematics (including statistics and mathematical modelling) and economics.

There is an interest in the role that NGOs can play in shaping the debate over indictors of sustainable development. For example, the SDI process, perhaps more than any other to date, is seen as being legitimized by the level of NGO participation. Opportunities for participation include both the submission of independent reports and direct access to CSD meetings and documentation. At the moment "expert" processes and NGO initiatives tend to work in parallel, rather than collaboration for the most part. This means that NGO interests could be neglected in expert processes, and that NGOs are not receiving the full benefit of the expertise that exists elsewhere.

Extent to Which Tools and Methods Have Evolved

SDI thought and activity have undergone rapid development in the past few years. The call for national policies aimed at sustainable development began with the report of the Brundtland Commission (WCED) in 1987 and was repeated forcefully at the Earth Summit in Rio five years later. Agenda 21, the action plan of this conference, was a wide-ranging program for sustainable development at the local, national and international levels. It was recognized explicitly within Chapter 40 of Agenda 21 that monitoring and assessing progress towards sustainable development required the development of a set of suitable indicators, and noted that commonly-used indicators such as the GNP and measures of resources and pollution flows do not provide adequate indications of sustainability.

Pioneering work on tools and methods to monitor progress towards sustainability began shortly after the release of the WCED report. The Organization for Economic Cooperation and Development (OECD) and the World Resources Institute (WRI) have been involved in environmental indicator development since the late 1980s, while other organizations become involved after the development and release of Agenda 21. The OECD Council in 1989 called for further work to integrate environmental and economic decision-making. This was reiterated in consecutive G-7 summits, and led to the approval of an OECD Council Recommendation on Environmental Indicators and Information by OECD

governments in 1991. In addition, the OECD has been entrusted by its member countries to launch a new program of environmental performance reviews with the principal aim of helping Member countries to improve their individual and collective performance in environmental management.

In 1991 WRI surveyed more than 100 organizations and carefully reviewed the literature on sustainable development indicators. In 1992 WRI organized and hosted an international workshop on environmental indicators to discuss concepts, methods and tentative approaches. The attendees concluded that it was premature at that time to attempt a synthesis but pointed out the need for innovative approaches and experimentation.

The United Nations Commission on Sustainable Development (CSD) was set up after the Earth Summit to review progress in implementing Agenda 21, to identify problems encountered, and to make policy recommendations to governments and international institutions. CSD has recently published "Indicators of Sustainable Development Framework and Methodologies" which includes a list of approximately 130 indicators of sustainable development.

In 1993 the United Nations Environment Program (UNEP) and the United Nations Statistical Division (UNSTAT) convened a "Consultative Expert Group meeting on Sustainable Development Indicators". Participants were drawn largely from international agencies. NGO participation was confined to those NGOs involved in substantive technical work on indicators, such as WRI and IUCN. Meeting notes indicate general support for OECD's Pressure-State-Response approach toward development of environmental performance indicators at this time.

1994 saw the first informal Expert Group meeting on Development Watch (DVW), a UNDP initiative focused on monitoring progress towards sustainable development. Goals for this group include assisting with national capacity building for SDI data collection and analysis and related methodologies, and promoting, testing, and evaluating the use of SDIs and other development indicators for formulating/modifying national policies on sustainable development. During the 1994 fiscal year, the World Bank's Office of the Environment Department (ENV) established a team to work on environmental indicators. Consultations with NGOs as well as other international agencies and national authorities followed.

Parallel to these efforts, pioneering work done by WRI and the World Bank helped to launch what is known as 'environmental' or 'green' national accounting, which adjusts national economic accounts to reflect pollution costs and the depletion of natural resources.

In early 1995 an international policy conference was hosted by the Belgian and Costa Rican governments (in connection with UNEP and SCOPE) to seek consensus on the need for and the uses of indicators internationally. The CSD agreed that SDIs would be discussed at its 1995 meetings. 1996 saw the second Expert Group meeting of Development Watch.

Impacts of Tools, Measures, Etc.

It is clear that the work being done by the international agencies working with SDI is having an effect on the work of other international agencies. It is less clear whether they are having an effect on environmental strategies, programs, and decision-makers, although it appears they are having some effect at the national and supra-national level. Agenda 21 has had a significant impact on all these groups, resulting in the exponential growth in SDI interest, but it is hard to disentangle this from the effect the development of indicators has had independent of UNCED.

There is no evidence that international-level work being carried out on SDIs is having any effect at the community level. Nor is there any evidence that public opinion is changing, or even shifting as a result of this work. This is not entirely surprising, given the expert-driven nature of the work, and the fact that all SDI development resources are being used for work at the national and supra-national levels.

Implementation

By and large, the implementation of sustainable development indicators work is done by the agencies developing the approach or by consultants hired by the organizations. There is no evidence of any implementation being carried out at the community level. Similarly, the users of SDI approaches and tools are primarily the international organizations who are developing and modifying the methods and tools.

Resource Implications

All human and material resource requirements are provided by the organizations and agencies initiating the SDI work. Capacity building occurs at the institutional, national, and supra-national levels.

Linkages

The only vertical linkages occurring in the SDI work are between work at the national and international levels. While WRI and OECD suggest that the

pressure-state-response model is useful at the micro- and meso- levels, as well as at national and international levels, no examples are provided. OECD is one of the few organizations to even mention the possibility of working at sub-national levels, but notes that it is unlikely that data exists in relevant quantities at this level. OECD also notes the difficulty of generalizing national-level results to sub-national areas, noting that these will only be relevant if there is a relatively even distribution of characteristics across the country.

There are a number of horizontal linkages between international organizations working with SDI. As noted above, the agencies all use a similar methodology, and collaborate either informally or formally in the pursuit of this work.

Future Prospects

The pressure-state-response model (or some variant or it) is so dominant in SDI work that it will likely be adopted by other organizations interested in SDI activities. Currently there are few alternative approaches to SDI development and application.

Position of the IUCN/IDRC Approach Within the Context of Related Work

Although IUCN has historically played an extremely important international role, particularly through its program to promote the development of national conservation strategies, and its studies on "Caring for the Earth", the project under review here is quite isolated from contemporary main-stream work in monitoring sustainability at a world-wide level (see Appendix 9). On the other hand, at least a beginning has been made to integrate the work within a broader setting. Some of the thinking behind the IUCN approach was described in a discussion paper presented at an important conference hosted by the Rockefeller Foundation at the Bellagio Conference Centre in Italy in November, 1996.[16] The Conference concluded with the issuing of a series of principles -- the Bellagio Principles: Guidelines for Practical Assessment of Progress Toward Sustainability. The principles, which focus on guiding vision and goals, a holistic perspective, essential elements, adequate scope, practical focus, openness, effective communication, broad participation, ongoing assessment, and institutional capacity, clearly reflect thinking which has evolved during the conduct of the IUCN/IDRC Project. The need for relating reflective, participatory activity at a number of levels to the conventional international-level SDI activity is crucial; and the IUCN/IDRC Project (and individual members of the International Team) have an opportunity to play an important role in this integration.

Future Applications

The Review Team pursued at some length the question of future applications of the IUCN/IDRC approach with field workers in Colombia, India, and Zimbabwe. Project officials in the three field sites were reluctant to conclude that the IUCN/IDRC Project's tools and methods could be easily synthesized or generalized for application world-wide, at least for the specific tools which they were using. Even in Zimbabwe, where the Project has seen great general success, there is uncertainty about how the methods developed at the village level can be modified for general application at the district or national levels. Use of the Egg, Barometer, and Pyramid have required modification from village to village; and officials are cautious about moving too quickly to apply these methods/tools in new settings without thorough testing. The Barometer analysis completed for Zimbabwe at the national level was never referred to throughout the site visit, and one assumes that it is seen as an almost separate form of analysis. This issue deserves careful examination, because the national Barometer study does illustrate how, using national statistics, the basic Barometer concept can be used for integrating questions of human and ecosystem well-being. A basic conclusion in all three countries is that much additional testing of the IUCN methods and tools will be required before their more universal application will be possible. Further, forms of communication, based, perhaps, on the metaphors developed by IUCN, will need to be developed to facilitate linkages between the local and national levels.

A number of suggestions emerged concerning ways in which the chances for more general use of the IUCN approach could be encouraged. The report of the Review Team from Colombia suggests that researchers in CIAT would be prepared to join IUCN in a joint project to consider both the development of IUCN and UNEP approaches to assessment. This could remove the IUCN approach from relative obscurity, and allow it to demonstrate its vigour when combined with top-down, traditional approaches to studies of sustainability indicators. This could do much to "legitimate" the IUCN approach, and also provide a very important test of its limits.

Field workers in Zimbabwe are well aware that considerable potential exists for the expansion of the IUCN approach, both in Zimbabwe and in other countries of Southern Africa. Such expansion would require joint activities (e.g. with Ministries other than Environment and Tourism or other programmes such as CAMPFIRE). It would also require the building of allies among officials in other agencies, because DEAP can be seen as either a very promising process, or a potential threat to existing practices. The political building of allies and joint support is a very important part of future expansion.

Issues relating to expansion are less clear in India, where the overall IUCN approach appears to be less prominent. One of the suggestions from the site visit is that a particular donor agency be approached to develop a "test for sustainability" for projects which it sponsors, and that IUCN be asked to develop these tests using its approach. In this way, IUCN could play an important role in the consideration of every project sponsored by the agency. With success, the procedure could then expand to other agencies.

Some of the IUCN/IDRC methods and tools have received very little testing in the Project, so there is considerable scope for future development. Map Maker, for example, ought to have almost universal application in sites where either community mapping or mapping provided by technical experts is employed. Very little reference to Map Maker was discovered, however, during the site visits. The need for Map Maker may not be great in India, where computer mapping is provided through the IMSD Project. In Colombia and Zimbabwe, however, there should be great potential use for the tool. It is ironic that field workers in India have produced an IUCN paper concerning community mapping, but no testing of Map Maker is evident. Similarly, community maps are a vitally important output of the planning process at the village level in Zimbabwe, but the step of encoding the information in Map Maker has not been taken.

As noted several places above, future applications of the IUCN/IDRC approach will depend on collaboration between IUCN and other agencies. The IUCN methods and tools could become absolutely superb, but this will make little difference if their use is not appreciated by other potential users. The legitimization of the IUCN approach will require not only extensive testing, but also the systematic building of partners and allies on a world-wide basis.

One can envisage two particular roles for the IUCN/IDRC approach within the world community. One is to undertake joint development of IUCN's "bottom-up" tools and methods with the "top-down" approach of a large agency such as UNEP. Vertical integration of this sort is badly needed; and IUCN should be in a strong position to begin a joint investigation into the potential marriage of grass-roots and top-down approaches. A second opportunity or niche is for IUCN to broaden its experiences with grass-roots approaches, to increase the number of methods and tools used for effective participatory planning, and to become a leader among the now-leaderless group of agencies who are pursuing this approach. IUCN has the size and prestige to take on this role; and the current Project could represent the beginning of a much larger and more comprehensive initiative.

Major Conclusions

Various conclusions have been stated throughout the report, both in the main text and the appendices. It is useful, however, to bring the major conclusions together in this final section. First, conclusions relating to the three field sites will be identified. Then, conclusions of a more general nature will be listed.

Colombia

1. The Fundacion Pro-Sierra Nevada de Santa Marta (FPSN) was a logical partner for IUCN. Prior to partnership with IUCN/IDRC in 1994, the Fundacion was engaged in a community-based project to develop the Sierra Nevada conservation strategy. This effort, funded by GTZ, seemed to be an ideal vehicle for undertaking assessments of progress towards sustainability. The establishment of a Monitoring and Evaluation unit within FPSN was a logical link between the GTZ and the IUCN/IDRC Projects.

2. While the work on monitoring and assessment was expected to be directed at the sustainability projects of FPSN, which could yield valuable results in the form of tools/methods for undertaking such assessment, this application was not yet realized since the field projects may not begin until 1997 (depending on funding). The Fundacion's project on Sustainability Strategies was less advanced than the International Team originally thought, and the Fundacion was facing considerable internal strain resulting from the pressures of rapid growth, the effort required to mount the Strategies' project and the struggle to transform decision-making within the organization.

3. In the absence of an actual sustainability project to study, the Monitoring and Evaluation unit that was set up within the Fundacion found itself heavily involved in the internal dynamics of organizational change. In confronting this different, and rather unexpected, challenge, the unit responded creatively. Under the guidance of Alejandro Imbach and Eric Dudley, organization change itself became a major focus of the M and E group. In addition, it is significant that the Fundacion admitted its lack of understanding about sustainability. The reflection dictated by the IUCN/IDRC approach led to clearer understandings about stresses between nature and economic development, about the need for assessment, and about the appropriate application of assessment techniques.

4. The rationale put forward by the M and E unit and their mentors for adopting this focus is fairly straightforward: they argued that in order for

an organization to implement effectively the overall approach that was evolving in the IUCN Project, with its emphasis on sustainability as an elusive, emergent concept the approach to which requires humility and self-questioning, the organization itself must be "reflective", and must engage in a "systematic analysis of experience" as well as "institutional implementation capacity assessment". They went further to argue that the job of monitoring and assessing progress towards sustainability is really three-fold. It requires **self-assessment**, **project assessment**, and **system assessment**.

5. This proposition is intuitively appealing, and the "tools" that have emerged in support of it are quite interesting. One cannot say, however, that they have been sufficiently tested to allow a confident judgement of their value of applicability in other contexts. Stated differently, it may well be true that the IUCN "approach" requires reflectiveness on the part of those who use it. This is indeed one of its great strengths.

6. Not clear is whether reflectiveness, in turn, requires the creation or transformation of institutions in all the aspects prescribed in the Reflective Institutions document. Nor is it clear how the prescriptions offered in this document compare to other approaches to organizational change, a number of which presumably rest on a much broader and deeper base of research and practical experimentation.

7. Another contribution from the Colombia experience has resulted for making a virtue out of necessity. The GTZ funders required a Logical Framework Analysis of the Strategies project. By adapting LFA to make it more "hypothesis based", the Colombia team has developed a useful innovation. This too must be more thoroughly tested in other settings.

8. Perhaps the most salient aspect of the work in Colombia is the MARPS (PRAM) method for actually assessing the impact on both society and the ecosystem of sustainability initiatives. Because this method appears to offer much promise, the need for an English-language translation of its characteristics is eagerly awaited by those outside of Colombia. The method has a number of obvious strengths: it is highly reflective, involving periodic reviews of objectives and methods; its sequence of DIMENSIONS-INDICATIVE ASPECTS-VARIABLES-INDICATORS-is an important step forward in comparison with the best-known methods currently in use by many international institutions; the method is flexible, and may be used under different settings, including different hierarchical levels. These and other potential strengths have not been properly evaluated, however, since the method has not really been tested in Colombia.

9. There are a number of ongoing projects in Colombia related to sustainable rural development, projects which could benefit through joint exploration of the use of the IUCN/IDRC tools. In particular, M. Winograd and G. Gallopin of CIAT, which is based in Cali, are engaged in an indicators project supported by UNEP. They would be very interested in undertaking collaborative studies with the IUCN/IDRC group.

India

1. The section of Assessing Progress Towards Sustainability: Methods and Field Experiences (IUCN 1996)[17] which deals with work in India (pp. 30-39) provides a detailed and comprehensive description. The field site by the Review Team provided an opportunity to assess some but not all of the activity described in the IUCN report. The Review Team found nothing at odds with the report during its site visit, but it was not provided with observations or documents which could be used for a comprehensive review.

2. The conclusions reached by the Review Team are largely the result of impressions rather than careful analysis. DA staff reported a number of features and successes of the IUCN/IDRC Project, but the Review Team was not able to experience first-hand contact with these activities. System Analysis and Planning, for example, was described in general terms; but the Review Team was unable to obtain any detailed description of this application. Similarly, discussions in and around the meeting of the Bargur Gram Panchayat referred to the use of the barometer of sustainability. At the same time, the Review Team was unable to obtain any detailed applications of this procedure. To a considerable extent, therefore, the Review Team was presented with impressionistic evidence rather than hard information.

3. The role of DA within the IMSD in Tumkur District made DA a good choice for using and developing IUCN/IDRC methods and tools. DA has been in a particularly good position to promote grass-roots assessments and planning, and to help communities engage in a reflective process. DA plays an important community-development role within IMSD, which tends to be particularly strong in its technical, natural-resource aspects. This is a perfect setting within which DA can promote methods for considering ecosystem and human well-being together.

4. The Review Team had an opportunity to visit a number of DA's sites where long-term good management practices of natural resources were being promoted through appropriate technology. On the other hand, the

running of these projects did not seem to be associated with the IUCN/IDRC approaches/tools.

5. The DA staff working in the field on the IUCN/IDRC project were most impressive in terms of their background training, motivation, and activity. The loss of a key project leader (Vijay Pillai), however, appears to have had a quite detrimental impact on the progress of the project.

6. The Review Team was left with the impression that the IUCN/IDRC work of DA was somewhat marginal, and significantly less prominent than other work associated with the IMSD.

7. The DA staff have clearly had a significant impact on the planning activities of the Bargur Gram Panchayat. This impact seems to have more to do with local empowerment and participation than it does with the use of any specific IUCN tools. While System Analysis and Planning and Strategic Negotiation for Community Action are emphasized in IUCN documents, the Bargur Gram Panchayat seems to associate DA primarily with the general process of community empowerment. Women, in particular, are adamant about this feature of the Gram Panchayat's activity. Consideration for the larger question of the relationship between human activity and the natural environment seems to be much less important than concerns over the acquiring of additional funding for administration at the local level.

8. The IUCN/IDRC project has done little or nothing to tap indigenous knowledge concerning ecosystems/human relationships. The Tumkur District, for example, contains people whose ancestors have lived in the region for millennia, and whose culture bears the marks of an ongoing pattern of relationships between the human and natural environments. The region is rich in history of local-level efforts to manage water, for example; and the language and belief systems are rich in their reflection of human/nature relationships. The idea of long-term sustainability appears to be embedded in local language and culture. The IUCN/IDRC project could benefit greatly by accessing local cultural knowledge, and incorporating it in some fashion in contemporary assessments and planning.

9. The Review Team recognizes that it had inadequate time to undertake a really thorough review of project work in India. Travel, on the ground and in the air, consumed a great deal of time; and the opportunities for extensive interviewing were limited. At the same time, the DA offices in Bangalore, Tumkur, and New Delhi provided very little written documentation of project experience.

Zimbabwe

1. The IUCN activities in Zimbabwe observed by the Review Team coincide very closely with the description in Assessing Progress Towards Sustainability: Methods and Field Experiences (IUCN, 1996). The IUCN Report is a concise and very useful description of the project in Zimbabwe.

2. The Egg of Sustainability has proven to be a very useful metaphor for work within the villages. The concept is easily understood by a significant number of villagers, particularly when local adaptations are made (e.g. changing the various colour combinations of the egg yolk and "white").

3. The Barometer of Sustainability has been understood by a number of villagers, particularly those who are relatively young and literate. Some villagers, particularly those who are older, have difficulty understanding the concept. The tool helps villagers to consider simultaneously the questions of human and ecosystem well-being; and at least some are able to place their village on the graph. Several villages have found it convenient to use a 5-point scale for both axes, but at least one has reduced the number of categories to three on each scale. Villagers have been able to place their village on the graph for both the present and previous time periods; and they have found it useful to envisage movement along the "arrow" towards either better or worse conditions in the future. One village changed the health of their ecosystem from "category 2" to "category 4" following a good rain.

4. Plotting positions on the Barometer allows no possibility for "trade offs" between human and ecosystem well-being. This represents a serious and unnecessary constraint. The Review Team believes that it should be possible to envisage progress in either dimension without a commensurate change in the other.

5. The Pyramid of Action has been particularly useful at the village level. It has provided a good means for describing the need for communities to be self-reliant, and to depend on the help of "outsiders" to only a limited degree. The use of the Pyramid is particularly enhanced when combined with the River Game.

6. The various charts, assessments, graphs, etc. associated with DEAP represent the perceptions of community members. They do not reflect scientific or externally-tested technical data. As such, it is very difficult to assess their accuracy. External, scientific and technical information needs to be used to validate the community perspectives elicited through the DEAP process. This would include, for example, tests of the accuracy and significance of community maps. One method of providing external,

scientific information for local planning could be through GIS, perhaps information provided using Map Maker.

7. It is difficult to assess the full impact of the use of the Barometer and Egg of Sustainability because it is difficult to relate the assessments and actions in village-level planning to these tools. The high-priority actions identified in the planning process appear to represent basic needs--e.g. water supply, forest management, etc. It is very difficult to determine whether these priorities would have been any different without the use of the IUCN/IDRC tools. When asked this question, DST members indicated their belief that the use of the Barometer and Egg helped villagers to think of both the ecosystem and human wellbeing together. Whether this has resulted in the identification of specific high-priority projects, however, is unknown.

8. The testing and development of tools has been limited to twenty-four villages, and the DEAP process would benefit through additional testing in different socio-economic contexts and at different hierarchical levels (e.g. at the district level). The DEAP process to date appears to represent a splendid beginning, but much additional testing and development will be required before the process can be used throughout the country and beyond.

9. The various steps involved in undertaking community assessments and action plans have been tested extensively, have proved to be quite effective in the production of action plans, and have been modified where appropriate. The use of community reflection, PRA, and the IUCN tools provide a very effective combination.

10. The incentives associated with the DEAP process are quite effective. At the village level, food provided during the planning sessions, and the general appeal of the process, have led to the active involvement of a number of villagers. The training, per diems, and general attractiveness of the program have ensured good participation by members of the district, of the DSTs and the Core Team. The provision of funding by UNDP for a selected number of community projects should ensure that the planning process at the village level is worth-while. Without this funding one doubts that much effective action could take place. In other words, the planning process is tied to the allocation of resources, which is a prerequisite to effective planning.

11. The DEAP organization appears to be run well. Concentration on the ward level is important, since the ward is the smallest unit electing representatives to the district planning committees. In other words, the ward coincides with a unit of political representation in the region's most

important planning unit. The DST has good access to information and expertise from a number of ministries, particularly DNR. The fact that the DST is a subcommittee of the District Planning Council is also advantageous.

The case study for this review, involving the district of Umzingwane and ward 8, exemplifies the strengths of the organization. Ward 8 has both an elected councillor and chiefs who are highly supportive of the DEAP process. Umzingwane has a chief executive officer (Zii Masiye) who is dedicated to the DEAP process, and who plays a major leadership role in its development and implementation. The DEAP/IUCN Technical Advisor has been an active participant in the work of the Umzingwane DST, and he has also participated in some of the village planning.

12. While the DEAP Program has made considerable progress, no effort has been made, as yet, to develop sustainability indicators. The "indicators" developed so far are designed just to check the progress of specific actions or projects, and these actions have not been explicitly linked to the general quest for sustainability.

13. Preparation of a handbook will be of great value for continued work in the DEAP Program.

14. Timing has been important in explaining the success of DEAP. DEAP has evolved at the same time that the government of Zimbabwe has been engaged in a process of decentralization, thus giving greater authority to district-level planning. The IUCN/IDRC Project, and the appointment of Sam Chimbuya, occurred at a critical time in the development of DEAP. Ideas, resources, and the selection of a highly appropriate national leader coincided at just the right time.

15. The entire DEAP process is rich in experience and documentation, but the various findings and experiences are difficult to access. The IUCN/IDRC Project and DEAP would benefit significantly if resources were made available to provide comprehensive and continuing documentation (perhaps through contracting to a specific individual or group). Much use could be made of printed materials, pictures, video, etc.

16. The DEAP documentation, training manuals, etc. are available in the English language, but appear to be largely unavailable in local languages (Shona or Ndebele). It would be useful to make various forms of documentation, including brochures and videos, available in local languages as well as English.

17. The DEAP process seems sufficiently promising that it could be usefully extended to other ministries, programs, and projects within Zimbabwe. At the same time, extension to other organizations will require collaboration, and the garnering of support from a number of "allies". Perhaps DEAP/IUCN should seek specific collaborative projects with other agencies, particularly those in the process of developing sustainability indicators.

18. The IUCN/IDRC Project has limited horizontal integration, and virtually no vertical integration as yet. Even though a national-level analysis of the use of the Barometer of Sustainability had been undertaken by a member of the IUCN International Team, no mention of this Report was made at any time during the site visit.

19. Through the DEAP process people at the village level have achieved an important level of empowerment, and have been able to "plan for themselves". Further, they have been able to combine considerations for the ecosystem and the human community to produce action plans.

20. The IUCN/IDRC concepts and tools make no specific reference to the tapping of local, indigenous knowledge. The site visit revealed a wealth of local knowledge and traditional actions relating to resource management, reflected in practices and local language. The IUCN/IDRC Project has missed an important opportunity to tap and understand this knowledge.

21. There is a need to provide regular information about DEAP/IUCN/IDRC to those throughout Zimbabwe who are interested in community-based planning, environmental management, and sustainability indicators. Perhaps quarterly or semi-annual reports could be made available.

22. It is important that complete planning cycles at the ward/village/district level be completed before a comprehensive assessment of DEAP and the IUCN/IDRC tools is possible. This cycle should include the formal adoption of action plans, the funding of high-priority projects, and an assessment of the results. It should also include the development of long-term sustainability indicators.

23. There appears to be significant potential for the use of the IUCN/IDRC tools within the Zimbabwe education system. Whether the tools are to be used for communication or measurement, they appeal to younger members of village communities, and should be of interest and use to educational institutions.

24. While DEAP has had a good beginning, it still runs some risk of isolation and ineffectual action. There is a need to tie the action plans explicitly to

government planning in general at the national, provincial, district and ward levels. It is essential that DEAP planning be tied to sectoral and multi sectoral planning which leads to continued financial support and monitoring for projects.

25. If DEAP is to be extended to many more districts, other agencies, etc., the activities of the Core Team will need to be decentralized, probably to provincial offices. Given the significant human and material cost associated with DEAP, this would represent the need for very significant investment.

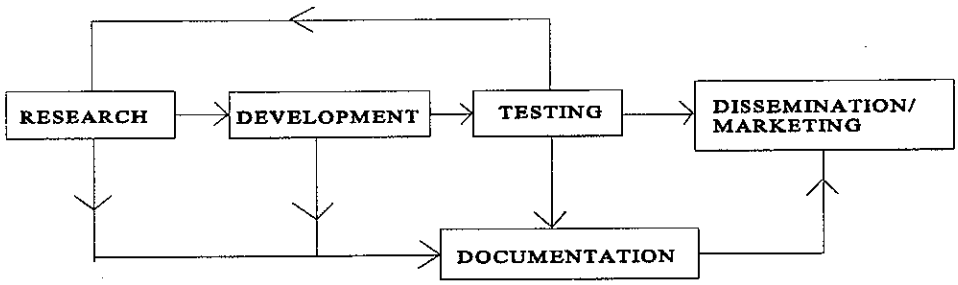
26. The Umzingwane meeting of the DST represented a very frank discussion of the strengths, weaknesses, opportunities, and threats to the DEAP Program. Among the items discussed during the three meeting days were a number of administrative difficulties which appear to be fairly normal irritants. At the same time, no serious difficulties with the concepts, methods, or tools of the IUCN/IDRC Project were identified. The concerns of the DST were focussed on administrative detail rather than any fundamental problem with the concepts or tools.

27. Periodic reflections and reviews should continue in order to facilitate learning and improvements on the methodology, as well as modifications to tools. These reflective actions should be well documented and shared with other stakeholders and/or teams. The IUCN/IDRC concepts and tools could/should be tested in programs other than DEAP (e.g. CAMPFIRE, Africa 2000). While DEAP has been an essential part of the development of the IUCN approach, at least some of the tools and methods could be tested in other environmental-management settings in Zimbabwe.

More General Considerations

Figure 6 indicates the process of developing and marketing concepts and tools for assessing sustainability -- the task of the IUCN/IDRC Project. It distinguishes among research, development, testing, documentation, and dissemination/marketing, all of which need to be coordinated and administered through an organization. The figure is a useful reference for considering the conclusions which follow.

Figure 6: The Process of Developing and Marketing Concepts and Tools for Assessing Sustainability



1. The IUCN/IDRC Project is based on a number of important theoretical concepts, particularly those centring on individual and group reflection, community-based assessment, community planning, and community-based monitoring and evaluation. While the initial conceptual basis of the Project is strong, there is little evidence yet that basic concepts have been re-thought or modified as a result of experiences in the field or discussion in international meetings and workshops. Research and conceptual development needs to be constantly informed by field realities and debate. One should expect Phase II of the Project to involve continued refinement of the key concepts underlying the IUCN/IDRC approach. Links, for example, between community participation, long-term sustainability, assessment/monitoring, and programme implementation need careful theoretical and practicable articulation.

2. Documentation related to Phase I of the Project is uneven, and missing in certain areas (e.g. PRAM, field sites in India). The various sections of Assessing Progress Towards Sustainability: Methods and Field Experiences (IUCN 1996)[18], and the accompanying booklets (An Approach to Assessing Progress Toward Rural Sustainability: Tools and Training Manual Materials Series, IUCN, 1996), appear to be somewhat disjointed, and they vary significantly in quality. One would expect the consistency, organization, and comprehensiveness of this form of documentation to improve during Phase II.

3. The IUCN/IDRC Project to date has tended to concentrate on the "development" of a number of tools related to sustainability. These tools need to be related more clearly to their theoretical underpinnings (e.g. the Barometer of Sustainability, the Egg of Sustainability, MARPS). The theoretical basis for the tools will require further refinement before more universal application of the tools could be expected.

The Barometer, the Egg, and the Pyramid, referred to as methods/tools in the IUCN documentation, are metaphors, intended to reflect important relationships and to facilitate communication. A metaphor engenders "an imaginative understanding of one thing in terms of another".[19] Value lies in its ability to enhance both imagination and understanding. A good metaphor can help us understand something new or unfamiliar, and also inspire new ideas about that which we already know. A "rich" metaphor (i.e. one that has many layers of meaning) can be developed and applied at different levels, or explored in relation to several dimensions. A bad or poor metaphor can diminish understanding or extinguish imagination.

The metaphor of the egg was chosen to illustrate the importance of a holistic approach to sustainability as requiring a healthy society and a healthy ecosystem. It seemed to work well in Zimbabwe, and generated some interesting variations, such as using different colours to depict different levels of "health" in the ecosystem and the society. It had to be abandoned in India because of the negative connotations of an egg. The idea of society as surrounded by the ecosystem was conveyed there by drawing a rectangle to represent the whole system, with a smaller rectangle inside to represent human society. This diagram lacks the rich connotations of the egg as a biological entity within which life processes take place: the notion that the yolk is nourished by the white; or the connotation that the entire system is surrounded and protected by a shell that is strong and yet fragile. Nor does it capture the association of the egg with birth, reproduction and regeneration. Indeed the egg is a powerful symbol (in our culture) of fertility and renewal.

It is interesting that these aspects of the egg metaphor have not been explicitly developed in the discussion of the tools and methods. Similarly, the egg metaphor's value as a teaching/learning device should be more explicitly explored and assessed. It should be noted that it was not used in Colombia because the project leaders did not like it. From their perspective, sustainability is a complex, elusive notion, lacking the concreteness and simplicity implied by the egg metaphor, which falsely suggests that sustainability can be easily defined, recognized and attained.

As with the Egg, the Barometer and Pyramid should also be carefully analyzed for their metaphoric implications and values. They, too, have strengths and weaknesses; but their full metaphoric and theoretical connotations have not been explored (e.g. see Appendix 2).

4. While the Project has seen considerable "development" of tools, there has been little "testing". Proper testing, which should be part of Phase II, should involve efforts to use the tools by different persons/organizations in a variety of settings to determine both the utility of the tools and the degree

of consistency associated with their use. The various IUCN tools have been "tried out" during phase 1, and they have proven to have real value in some settings. The task remains, however, or systematically testing the tools, which will involve more controlled experimentation and documentation.

5. Related to the preceding point, the development and testing of tools and concepts would benefit from collaboration with other agencies (e.g. CIAT, Colombia). Such collaboration could provide additional opportunities for field testing, as well as exposure of the IUCN/IDRC approach in broader settings. Collaboration could usefully include work with agencies who are assessing sustainability both at the macro-level (e.g. UNEP) and at the grass-roots level (many opportunities exist, in India, for example).

6. The IUCN/IDRC Project has involved little experimentation with the use of specific approaches or tools at different hierarchical levels (e.g. village, district, province, nation). The full utility of the concepts and associated tools will require testing at many different levels. This was stated as a goal of Phase I, and it should be developed during Phase II.

7. Similarly, the IUCN/IDRC concepts and tools have not been replicated or expanded horizontally, to much extent. This needs to be a focus of Phase II, preferably involving horizontal integration with a number of different agencies or programmes (e.g. CAMPFIRE, Zimbabwe).

8. In order to undertake vertical and horizontal integration, as well as collaboration with other agencies, IUCN will need to develop some additional partnerships during Phase II.

9. As the IUCN/IDRC concepts and tools are developed and tested, the Project could usefully continue to develop more and more linkages, perhaps through the establishment of a formal or semi-formal computer network.

10. Historically, IUCN has played an important role in the development of environment-related planning and conservation at the national and international levels. It would be appropriate for IUCN to maintain a high profile and level of influence, but the current Project runs the risk of isolation if active linkages, and a strong role, are not sought within the world community. Achieving and maintaining a prominent role will be dependent on collaboration with other agencies, networking, and continued improvements in conceptual development and testing.

11. Within the world community, those concerned with macro-indicators of sustainability (e.g. CSD) maintain a powerful position of influence, and

tend to speak with one voice. Those concerned with the development of assessment procedures and sustainability indicators at the community or grass-roots level, however, are much more dispersed in activity, communication, and influence. IUCN/IDRC have an opportunity to assume an important leadership role among those working at the grass-roots level. This role would be enhanced, of course, if it were undertaken in association with those who tend to work from the "top-down". The formidable task of relating top-down approaches to bottom-up approaches needs to be addressed; and IUCN/IDRC could take the lead in addressing this vital question.

12. Although the Project has made significant headway at the grass-roots level, it has not considered local, "indigenous knowledge" to much degree. The potential for tapping this knowledge is great in all three field sites, and it is not clear why efforts to understand indigenous terms and practices have not been made. This is particularly odd, given that much of the international work in grass-roots assessment of sustainability has focussed on indigenous knowledge.

13. There is much potential for linking the work of the IUCN/IDRC Project to public education. Perhaps the most eager and active village participants in the Project have been the young, which helps to emphasize the importance of developing the concepts and tools in association with educational agencies. Further, the Project work lends itself easily to the preparation of educational materials (e.g. booklets, videos, CD ROMS) which might be made available and tested within a variety of educational settings.

14. Phase I of the IUCN/IDRC Project proceeded without any full-time staff fully devoted to the administration, or the conceptual and operational development of the Project. Rather, the Project, administered as part of ongoing responsibilities by IUCN, involved periodic meetings of the International Team, a few national workshops, and the (usually) part-time contribution of a variety of international participants. Phase II of the Project could be greatly strengthened with the addition of a full-time staff member, whose time was completely dedicated to the development of the Project. Such leadership or coordination should greatly improve the consistency and orderly progression of Project activities.

15. Documentation for this review involved the preparation of several hours of video in Zimbabwe and India (an edited version is included with the Report). The visual images and sound of the videos prove to be extremely valuable in helping the Review Team and others to understand work in the field settings. Videography could be a very important part of future documentation for the IUCN/IDRC Project. It could be used, for example, for both horizontal and vertical integration, where videos could be used to

illustrate the work of the Project in different sites, particularly to those who cannot visit those sites. Given rapid technical change, one can also envisage a very useful role for a range of electronic media, including CD ROMs, for future Project work. Documentation such as videography could be prepared by amateur Project participants. Professional videographers could be used to prepare materials for formal presentations and for public education.

ENDNOTES

1. IUCN, Assessing Progress Toward Sustainability: Methods and Field Experiences, 1996.

2. The IUCN booklets include the following: Barometer of Sustainability; Questions of Survival; Reflective Institutions; Assessing Rural Sustainability-40 Steps; Planning Action for Rural Sustainability-40 Steps; and Community-based Indicators. An additional booklet, Participatory and Reflective Analytical Mapping, is still under preparation.

3. IUCN, op. cit., page 4.

4. IUCN, op. cit., page 4.

5. IUCN, op. cit., page 4.

6. IUCN, op. cit., page 5.

7. IUCN, op. cit., pp. 9-35.

8. See Endnote #2.

9. IUCN, op. cit., 1996.

10. IUCN, op. cit., 1996.

11. Hodge, R. A., Assessing Progress Toward Sustainability: Development of a Systemic Framework and Reporting Structure, PhD (interdisciplinary) dissertation, School of Urban Planning, Faculty of Engineering, McGill University, Montreal, 1995.

12. Prescott-Allen, R., History of the Barometer of Sustainability, unpublished, 1996.

13. Prescott-Allen, R., Towards a Barometer of Sustainability for Zimbabwe (second draft), unpublished, July, 1995.

14. Prescott-Allen, R., op. cit., 1995.

15. Johnson, S., Monitoring Progress Towards Sustainability: Agency Comparisons, 1997 (Appendix #8).

16. Hodge, R. A. L., P. Hardi, Towards Principles of Sustainable Development Performance Measurement, Discussion Paper for the Conference hosted by the Rockefeller Foundation at the Bellagio Conference Centre in Italy, November 4-8, 1996.

17. IUCN, op. cit., 1996.

18. IUCN, op. cit., 1996.

19. Lakoff, G., and M. Johnson, Metaphors We Live By, Chicago: University of Chicago Press, 1980, p. 6.

Australian Government
Department of the Environment, Water, Heritage and the Arts

Our reference: 2007/12494

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WHC
Date 22/01/08
GB

Mr Francesco Bandarin
Director
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7, place de Fontenoy
75352 Paris 07 SP
FRANCE

Dear Mr Bandarin

Thank you for your letter of 6 August 2007 to the Permanent Delegate of Australia to UNESCO providing the copy of Decision 31 COM 7B.14 by the World Heritage Committee at its 31st Session (Christchurch, New Zealand, 23 June to 2 July 2007) concerning Macquarie Island (Australia) (N 629 Rev).

In response to the Committee's request, I am pleased to provide to the World Heritage Centre the updated information on the state of conservation (SOC) of Macquarie Island, for the Committee's consideration at its 32nd session in 2008. SOC reports requested by the Committee in relation to two other Australian properties (Purnululu National Park and the Tasmanian Wilderness) will be provided separately.

If you have any queries concerning the information provided, or require additional information, please contact Dr Ken Heffernan, Director Heritage Policy (email ken.heffernan@environment.gov.au; phone +61 2 6274 2167.

Yours sincerely

James Shevlin
First Assistant Secretary
Heritage Division

23 January 2008
cc Sally Mansfield, Permanent Delegate of Australia to UNESCO