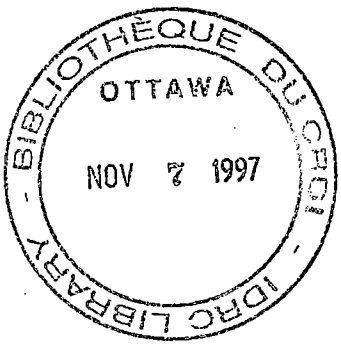
# Systemic User-driven Sustainability Assessment

## The IUCN/IDRC Project on Monitoring and Assessing Progress Toward Sustainability: Approach, Methods, Tools, Progress

by

IUCN International Assessment Team

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# Preface

In 1992, strategy practitioners from Asia, Africa and Latin America asked the Strategies for Sustainability Programme of IUCN to provide assistance in monitoring and evaluating strategies. Since there was no "off-the-shelf" method of assessing strategies, the Programme set out to develop one with the assistance of the Canadian International Development Agency (CIDA) and the International Development Research Centre (IDRC).

In December 1993, IUCN and the Delhi-based NGO, Development Alternatives, organized a workshop in India on monitoring and evaluating strategies for sustainability. Three days were spent discussing indicators of sustainability. Yet the more material we assembled, the less headway we made. We felt as if we were sinking in an ocean of indicators with no sense of direction or context.

Meanwhile, IDRC had undertaken a comprehensive review of the topic and concluded that people first had to agree on a conceptual framework and the process of assessment before addressing indicators. It had published a conceptual approach to assessing sustainability (Hodge 1993), which it was interested in testing and developing further.

Thus IUCN and IDRC came together with a common interest in assessing sustainability and scepticism about focussing on indicators. Both were also convinced of the necessity of tying theory to practice by closely combining research, development and field-testing.

With the support of IDRC, IUCN assembled an international assessment team to develop and test a practical method of assessing progress toward sustainability. The team consists of people experienced in participatory development and communications, state-of-the-environment reporting, monitoring and evaluation, and strategy formulation.

We began to focus on the process of assessment and the context in which indicators are used. Issues were tackled like "sustainability for whom?", differing value and decision-making systems, and how to motivate people to take action in response to assessments.

From this debate has emerged the approach to assessing sustainability that is summarized in this document. A set of methods and tools is being tested, adapted and refined in Asia, Africa, and Latin America by local strategy teams:

- ***Asia.*** The Development Alternatives team working with district level planning officials in Tumkur district, Karnataka State, India: George C. Varughese, Vijay Pillai, C. Ashok Kumar, Sriparna Sanyal.
- ***Africa.*** The District Environmental Action Plan teams in Zimbabwe: Elliott Makha, Sam Chimbuya, Carmel Lue-Mbizvo.
- ***Latin America.*** The monitoring team of the Fundacion Pro-Sierra Nevada de Santa Marta: Natalia Ortiz, Hernando Sanchez.

The members of the international team are:

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

Although particular products have been attributed to the individuals directly responsible for their development, all members of the international and national teams have contributed essential ideas and feedback. In addition, we owe a particular debt to the villagers with whom we have worked, for their patience, candour, hospitality, humour, and insights.

Nancy MacPherson,
Coordinator, Programme on Strategies for Sustainability,
IUCN - The World Conservation Union.

# Purpose and Approach

## Purpose

The purpose of this project is to develop and test a practical method of assessing progress toward sustainability. The aim is for the method to be useful and useable in a range of contexts at local, regional and national levels. To achieve this purpose, IUCN has formed an international team and linked it to national teams working on local strategies for sustainability in Colombia, India, and Zimbabwe.

## Approach: Systemic User-driven Sustainability Assessment (SUSA)

The project is developing and testing an approach to assessment, together with a set of methods, tools and training materials. We call the approach Systemic User-driven Sustainability Assessment (SUSA), to emphasize its distinguishing features:

### Systemic

- *Systemic*—designed to provide a sense of the overall system (the human subsystem within the ecosystem), not just of the parts.
- *Goal-directed*—focussing assessment on improving the condition of people and the ecosystem.
- *Hierarchical*—grouping indicators into sets and arranging them from the particular and local to the more general and universal. The hierarchy enables indicators to be aggregated (necessary for a sense of whether the overall system is getting better or worse). It also permits the use of locally relevant indicators while allowing comparisons at a higher level of generalization.
- *Hypothesis-led*—formulating assessments and proposed actions as hypotheses so that users may learn from them and improve their actions.

### User-driven

- *User-driven*—reflecting the conditions, needs and priorities of the people using the assessment, and allowing users to choose their own indicators.
- *Consensus-based*—incorporating widely accepted elements of other conceptual frameworks and approaches to assessment.
- *Visually immediate*—so that people can quickly grasp where they are and where they are going.
- *Transparent and accessible*—making values and judgments clear, and presenting data in such a way that others may explore alternative interpretations.

The model of the system is shown in the egg of sustainability (Figure 1). Human societies form a subsystem within the ecosystem, just as the yolk of an egg is within the white. For an egg to be good, both the yolk and the white have to be good. Likewise, a society is sustainable only if *both* the human condition and the condition of the ecosystem are satisfactory or improving. People and ecosystem are equally important. If the condition of

*either* is unsatisfactory or worsening, the society is unsustainable.

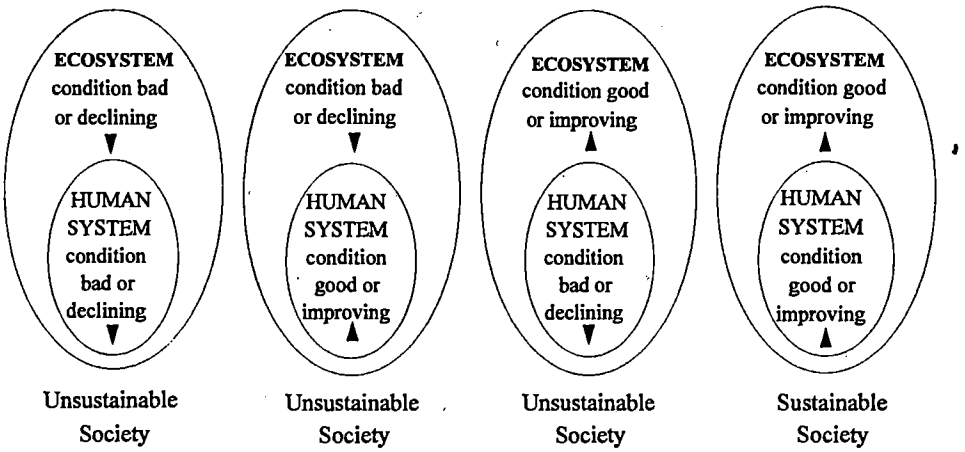


*Figure 1. The egg of sustainability (Prescott-Allen 1995)*

Recognizing that people are an integral part of the ecosystem, a logical goal for every society is ***to improve and maintain the wellbeing of people and the ecosystem***. To assess progress toward this goal an assessment needs to ask five questions:

- What is the condition of the ecosystem, how is it changing and why?
- What is the condition of people, how is it changing and why?
- What are the main interactions between people and the ecosystem?
- What conclusions can be drawn about progress toward the goal? (synthesis)
- What needs to be done to make progress toward the goal? (strategy)

These questions provide the assessment framework (Figure 2).

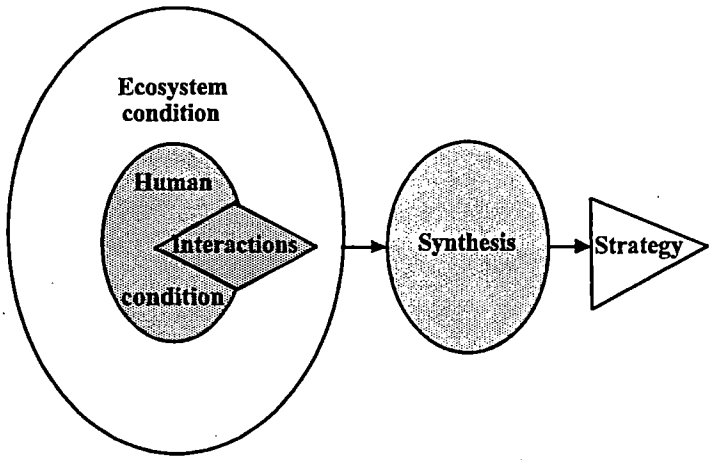


*Figure 2. Assessment framework (based on Hodge 1993, 1995)*

Distinguishing features of the SUSA approach include:

- SUSA treats people and the ecosystem together as one system. Many other approaches divide the system into three components: economy, society, environment. Such a division is misleading because it: (a) puts people outside the ecosystem; (b) demotes the ecosystem to one of three factors; (c) splits economic and social aspects of the human subsystem, although they are intertwined (and

differently defined by different disciplines); (d) sets human and ecosystem wellbeing against each other when the need now is to improve and maintain both.

- SUSA assesses the whole system as well as the parts. Most other approaches lack a method of combining the parts to show the big picture.
- SUSA treats people and the ecosystem as equally important. Most other approaches have a bias toward one or the other.
- SUSA allows each issue to be analyzed with the most appropriate method. Most other approaches are either economic (for example, modified national accounts, and the Index of Sustainable Economic Welfare) or environmental (for example, pressure-state-response [PSR]), and distort analysis of issues for which they were not designed.
- SUSA lets users choose their own indicators. Most other approaches choose the indicators in advance.

# Methods

The project has helped to develop and test four methods:

- ***Barometer of Sustainability***, a method of assessing human and ecosystem wellbeing, and a tool for synthesizing and portraying the results in an index of sustainability (or overall wellbeing).
- ***Rapid Assessment Mapping for Sustainability (RAMS)***, a method of quickly obtaining a broad understanding of a system and of identifying priority areas for action.
- ***Assessing and Planning Rural Sustainability***, a step-by-step method for strategy teams working with villagers.
- ***Asking Questions of Survival***, a method of helping institutions to assess and manage people-ecosystem interactions.

## Barometer of Sustainability

The Barometer of Sustainability provides a systematic way of organizing and combining indicators so that users can draw conclusions about the conditions of people and the ecosystem and the effects of people-ecosystem interactions. It presents those conclusions visually, providing anyone—from villager to head of state—with an immediate picture of where they are and where they are going.

The Barometer combines indices of ecosystem wellbeing and human wellbeing into an index of sustainability without trading one off against the other. It may be used at any level: local, provincial, national, or international.

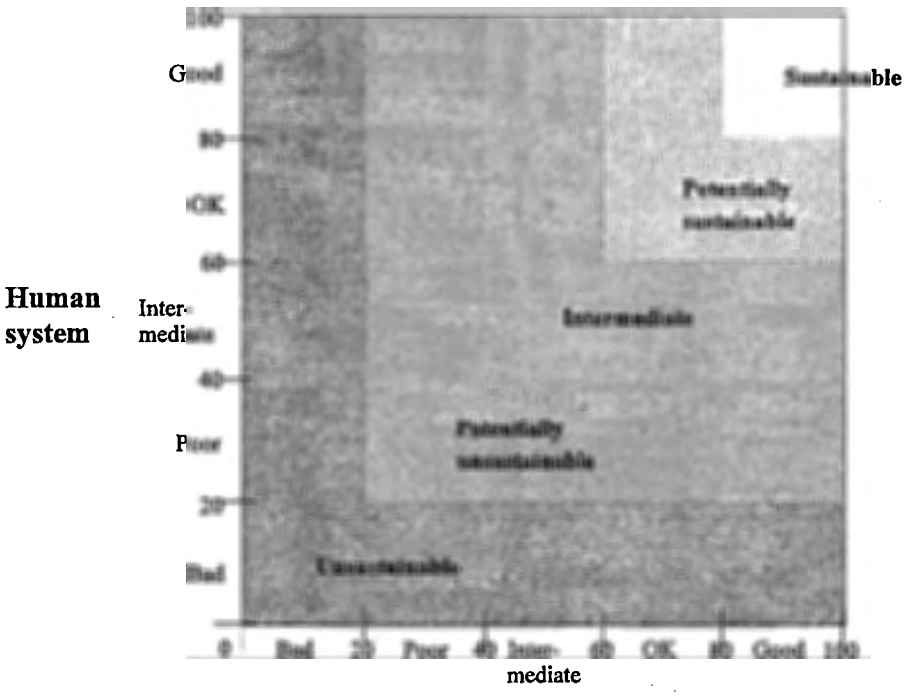


*Figure 3. Barometer of Sustainability (Prescott-Allen 1995)*

Aggregating indicators to indices is done via the hierachy:

| SUBSYSTEM | | ECOSYSTEM | PEOPLE |
|---|---|---|---|
| **dimension** | e.g., | **ecosystem quality** | **knowledge** |
| ***indicative issue*** | e.g., | ***land quality*** | ***education*** |
| indicator | e.g., | eroded land as % of land area | adult literacy rate |

Dimensions are universal. The four ecosystem dimensions build on the components of ecosystem conservation of the *World Conservation Strategy* (IUCN/UNEP/WWF 1980) and *Caring for the Earth* (IUCN/UNEP/WWF 1991). They are:

***Naturalness or conversion***. Gives a sense of the scale and rate of a society's overall impact on the ecosystem, both within and beyond its territory. The proportions of the territory that are natural, modified, cultivated or built suggest how much of the planetary support system the society has taken for its own immediate use, and how much it has left both for other people and for the rest of life.

***Ecosystem quality***. Deals with the general condition of air, water, and land, including use of the ecosystem as a sink for wastes. Covers productivity, pollution, and degradation.

***Biodiversity***. Looks at whether we are maintaining or reducing the diversity of ecological communities, wild species, and genetic variants such as crop varieties, livestock breeds, and wild populations.

***Resource use***. Covers use of the ecosystem as a source of goods, both renewable (timber, fisheries, forage, wildlife, soil, water) and nonrenewable (minerals, oil, gas, coal)

Similarly, the four human dimensions build on the indicators of human development of the *Human Development Report* (UNDP 1990 and following years). They are:

***Health and population***. Comprises fertility, mortality, disease, food and nutrition, health practices, and health services. A long and healthy life increases the opportunity for a person to pursue goals and develop abilities.

***Wealth and livelihood***. Considers income, employment, housing, transport, infrastructure, technology, and other goods that enable people to survive or that expand opportunities and provide means to exploit them.

***Knowledge***. Includes formal and informal education, research, and communication. Knowledge equips individuals, organizations and society to fulfil their potential, improve understanding of the ecosystem and human system, and develop the information and skills required to live sustainably.

***Behaviour and institutions***. Covers social behaviour and institutions in their widest sense: the values, customs, laws, incentives and organizations that enable societies to manage people's relationships with each other and the ecosystem.

Indicative issues are widely but not always applicable. Examples of indicative issues include water quality, species diversity, employment, and conflicts and violence. The choice of issues will depend on which ones reveal the dimension most clearly, what issues most concern people (recognizing also that different issues matter more or less to different interest groups), and for what issues can indicators be developed.

Indicators are context-specific and chosen by users. Examples of indicators include fecal

coliform levels, number of threatened species, unemployment rate, and homicides/100,000 people. The choice of indicators will depend on which ones reveal the issue most clearly and for which data can be obtained. The more indicators there are per issue, the more they will neutralize each other. As a rule of thumb, the maximum is four indicators per issue. Often one or two per issue will be enough. These suggestions apply only to indicators that are used to calculate the Barometer's indices of human wellbeing and ecosystem wellbeing. Additional indicators may be compiled to improve analysis of the issues.

Transforming many different indicators into one big picture requires combining or aggregating the indicators up the hierarchy: from indicators to indicative issues; from indicative issues to dimensions; and from dimensions to systems. Prescott-Allen (1995) describes a way of doing this, and explains the method in more detail, discussing its uses and potential misuses.

A simplified Barometer has been translated into Shona and Ndebele as part of the method of assessing rural sustainability in Zimbabwe (see below). Simplification involves using the qualitative scale only. When drawn on the spot (rather than prepared in advance) and explained as it is drawn, it is easy for villagers to grasp. The next step is to move from a qualitative to a quantitative version as part of the assessment of action plans. The Barometer has also been adapted for use in Rapid Assessment Mapping for Sustainability (RAMS) in the Sierra Nevada de Santa Marta, Colombia.

The method is being promoted for use nationally and internationally as well as locally. The project has tested the Barometer at the national level in Zimbabwe to see how easy it was to use in countries where data on a wide range of indicative issues are unavailable or difficult to obtain. The experiment was successful. It is hoped that Zimbabwe and other countries will develop their own Barometers.

## Rapid Assessment Mapping for Sustainability (RAMS)

Rapid Assessment Mapping for Sustainability (RAMS) allows planners, field workers, and researchers to get a broad understanding of a system from an early stage and provides a method for identifying priority areas for action and research. It has emerged from the approach described in ***Asking Questions of Survival*** and is designed to make use of Map Maker software (both described below). RAMS can be used to assess any spatial region, from a continent to a village. The method stresses four points:

- ***Expert groups.*** A participatory approach in which "expert" groups (e.g., scientists, field workers, long distance truck drivers, village women) are the key sources of data.
- ***Integrated analysis.*** The integration of ecological and social issues into a single framework of analysis which considers both the state of the environment and the characteristics of human values and power that influence it.
- ***A spatial hierarchy.*** The use of a hierarchy of spatial levels in which each level is divided into cells which are themselves the next level down, e.g., region, province, landscape, village, and farm.
- ***Simple maps.*** The use of simple maps as tools for analysis, discussion, consensus, communication, and project documentation.

The method involves six stages:

- *Level.* Identify the area or region (the level of complexity) to be assessed, which could be anything from a continent to a village.
- *Cells.* Identify the spatial cells of analysis. These should typically be one level down from the overall area to be assessed. In other words a continent would normally be divided into cells corresponding to countries, whereas a village is divided into farms. If the cell is too small relative to the area the grain becomes too fine and the overall picture cannot be grasped.
- *Actors.* Identify the social agents or "stakeholders" involved in the area being examined.
- *Measure.* For each cell assess both the state and the tendencies of the various dimensions being assessed. The nature of the measurement will vary but for the purposes of rapid mapping two key techniques are used: the desk study of existing data and the expert group meeting. The expert group may be specialist scientists, long distance lorry drivers, or village women depending on the issue being analyzed (it is structured gossip).
- *Map.* Map the results, showing both agregated results and individual variables. Where appropriate, average (or sample) data for cells should be used to generate continuous "data surfaces" so that values for areas without hard data may be interpolated. The RAMS method is predicated on always having a "best guess" for the values of the variables at any point in the area of interest. In this way composite data surfaces may be created from disparate data sets for different variables, some detailed, some crude.
- *Prioritize.* Use the maps to help identify and prioritize action to bring about change and research to fill key data gaps. In making priorities it is often necessary to work back from data surfaces to extract average values for a cell, since the cell of analysis should also be the grain at which actions are taken.

This cycle of analysis may reveal that one or more of the cells is particularly interesting or problematic. The RAMS method can then be applied to that one cell breaking it down in turn into a finer grain of cells.

The RAMS method may be used to analyze any kind of continuously varying data with any kind of underlying model. It is described in a draft document in English and Spanish (Imbach & Dudley 1995) and has been presented to meetings of IUCN members in Central America, Ethiopia, and Switzerland.

## Assessing and Planning Rural Sustainability

This is a participatory method of assessing rural sustainability and planning action. The method is divided into two stages:

1. ***Assessing rural sustainability***. Exploring the conditions of the ecosystem and people and preparing for action planning. This stage is intended to help villagers and the strategy team arrive at a common understanding of ecosystem wellbeing, human wellbeing, the need to improve both together, and the need for action to be based on villagers' own commitments.
2. ***Planning action for rural sustainability***. This stage has two phases. First the villagers prepare a preliminary action plan. This identifies a few priority issues, the

actions the villagers will take to tackle these issues, the additional actions they could take with help (such as training, tools or equipment, seed money), the help that is needed, and the outside support that is required. Then the strategy team returns to conduct a joint assessment with the villagers of the practicality of the plan and the villagers' commitment. At the same time, the villagers and team clarify the hypotheses underlying the plan and develop indicators to assess them and the plan's progress and effectiveness.

***Assessing rural sustainability*** consists of four steps before going into the field and 21 steps in the field. The latter can be covered in three meetings of about 4-5 hours each (a total of 12-15 hours). The steps include a variety of tools used in participatory rural assessment (PRA). Some are standard—games, mapping, dialogue (semi-structured interviewing)—and some have been developed for the project: the Egg of Sustainability; a simplified Barometer of Sustainability; and the Pyramid of Action (described below).

The team first sets the scene. A game is played to show that sustainable development depends on people learning to do things for themselves. The team explains the project and then uses the Pyramid of Action to reinforce the need for the community's strategy to be founded on the villagers' own actions. The team introduces the Egg of Sustainability to get across the idea that people are a part of the ecosystem and that the wellbeing of both people and the ecosystem need to be improved. Next the team facilitator draws the Barometer of Sustainability, which reinforces this idea and provides the community with a tool for measuring human and ecosystem wellbeing. The villagers define the sectors of each scale (from bad to good) using their own terms. Afterwards they discuss where they are on each scale (an initial reading of the Barometer) and list the factors that contribute to human wellbeing and ecosystem wellbeing.

In the next series of steps, the community explores the condition of the ecosystem. Villagers define components of their ecosystem (forests, rivers, wetlands, grazing lands, croplands, setttlements), and divide into groups to draw past and present maps. On the maps and in diagrams they analyze and show changes in each component: area, condition, diversity of plants and animals, and products and services. Group findings are discussed by the meeting as a whole to try to reach consensus or (failing that) record differences.

This leads to the exploration of the condition of people. The villagers again divide into groups to examine and portray concepts, status and trends of food, income, wealth and poverty, infrastructure, health and population, knowledge, and institutions. As with the ecosystem exploration, group findings are discussed by the meeting as a whole to try to reach consensus or record differences.

The final series of steps prepares the community to work on its own action plan. The meeting revisits the Barometer to see if people want to reassess their positions on the human and ecosystem scales, in light of their assessment of their own condition and the ecosystem condition. They discuss improvement of both conditions. The team then asks the community to prepare a preliminary action plan to move it in the desired direction.

***Planning action for rural sustainability*** also suggests preparatory steps, followed by steps in the field. The first series of steps covers a joint assessment by the villagers and team of the practicality of the plan and the villagers' commitment. Part of the purpose of this is for the community to examine whether the solutions it proposes are likely to solve the problems (for example, a proposed dam will not work unless land use practices are changed to reduce erosion). This may require further discussion about the causes of problems, how problems are connected, and what the villagers can do about them. It

certainly calls for clarification of the hypotheses underlying the plan. The remaining steps deal with the selection and development of indicators to assess the hypotheses and the plan's progress and results.

***Assessing rural sustainability*** is available as a draft booklet, and a booklet is being prepared on ***Planning action for rural sustainability*** (Lee-Smith *et al.* 1995). The method is being tested in Zimbabwe by the national and district teams working on District Environmental Action Plans. The booklets will then provide a method of assessing and planning rural sustainability that we hope will be generally applicable to rural sub-Saharan Africa. Adaptation of the method to other regions or to urban areas would require testing and development in a follow up project.

## Asking Questions of Survival

*Questions of Survival* is a resource booklet for workshops. It is designed primarily for use with community groups and local field workers, although the questions are more widely applicable. The questions are intended to act as a starting point for a problem-solving approach in which the participants are encouraged to examine their own situation and take on the search for answers as their own task. The draft booklet was produced in mid-1994 and has been translated from the original English into Spanish, Hindi, and Gujurati. In response to feedback, a new version is being prepared consisting of six questions:

- ***Change***. In what way is your environment changing? What is the state and what are the tendencies in the environment? What are the problems?
- ***Victim.*** How is your environment being affected by others in ways which seem out of your control?
- ***Culprit.*** How are you adversely affecting other peoples lives?
- ***Knowledge***. Who knows what about your environment?
- ***Community.*** Who else shares your problems or has similar ones?
- ***Values***. What are your aspirations? What kind of society are you trying to build? What are you prepared to lose to gain what you want?

The original *Questions of Survival* was also summarized in a draft black and white poster as a means of keeping it in the minds of field workers. This poster is being updated.

The *Questions of Survival* booklet was the first of a series of draft booklets produced and tested as part of the project. Others include *Reflective Institutions*, *What are Strategies for Sustainability?*, *Principles of Evaluation*, and *Mapping Sustainability*. ***Asking Questions of Survival*** (Dudley & Imbach 1995) draws on these booklets. It is aimed at the institutions —the interveners—that are trying to conserve or improve the environment. The document acts as a guide not only to using *Questions of Survival* but also to developing a people-focused approach to sustainable development. Specifically it provides:

- The fundamental questions that need to be asked before we can recognize whether development is sustainable or not.
- Guidance on how the *Questions of Survival* booklet can help both to explore these questions and stimulate action.
- Guidance on institutional structures that can best make use of the findings.

- Practical techniques for communicating and sharing the findings in ways designed to lead to action.

Two contentions underly the method:

- ***We don't know what we are doing.*** Nobody has the answers for how to do sustainable development. We need to adopt a humble approach in which we explictly recognize our own ignorance and regard all our actions as experiments to test ideas and learn a little more.
- ***The arena for action is in influencing human behaviour.*** Environmental problems are generally caused by human actions. Our task is to understand the interaction between people and the environment and influence human behaviour to improve that relationship.

The environment and the institutions that wish to conserve or improve it are at either end of a chain of influence. The intervening institutions need to influence the stakeholders in the environment who in turn have an impact on it. In this chain of influence there are four questions which assessments need to answer:

- ***What are the environmental problems?*** The state of the environment. Are there any environmental problems? How are things changing for good or bad?
- ***What human behaviours are causing the problems?*** A human impact analysis. What aspects of the interaction between people and the environment do we think are causing the environmental problems. The problems may result from either action or inaction.
- ***What human characteristics are behind the behaviour?*** The sociological analysis. With regards to the problematic behaviour, why are people doing what they are doing or not doing what they are not doing?
- ***What openings are there for influencing that behaviour?*** The institutional capacity for social change. What, realistically, are the areas where the institution concerned may have the chance to influence people's values and the distribution and exercise of power?

The *Questions of Survival* booklet uses simple language to explore these more fundamental questions indirectly and to suggest possible avenues for action. ***Asking Questions of Survival*** suggests that traditional institutions are often poorly equipped to ask the necessary questions and respond constructively to the answers. It suggests that sustainable development needs a new breed of "reflective institutions" which can learn through doing. Although there is no blueprint for such institutions, it is suggested that they have these characteristics:

- ***Feedback.*** Experience of action informs and changes policy.
- ***Hypothesis-led planning.*** Projects are designed to test and improve hypotheses.
- ***Strong horizontal linkages.*** Communication among disciplines, departments and institutions is encouraged.
- ***Explicit vision of past, present, and future.*** Institutional memory, understanding, and objectives are shared and debated.
- ***A tendency to breed reflective institutions.*** Beneficiaries and participants are encouraged to take control of their own projects.

- ***The constructive identification of failure.*** Errors and failures are seen as important resources for learning.

For institutions, individual professionals, and communities to reflect on their knowledge and ignorance there is a need to present data in a way that can be shared and readily understood. While there are many analytical and communication tools available, it is suggested that simple maps should be a common and powerful theme. To be useful maps should be:

- ***Appropriately complex.*** A map should not have superflous detail but nor should it be over simplified. Its divisions should conform to the divisions that people actually use.
- ***Comprehensive and transparent.*** There should be a best guess for each variable for each point on the map but its level of certainty should be explicit.
- ***Modifiable by the users.*** Maps should be made by the people that need to use them. They should be readily modifiable and reproducable.

The general approach to using maps discussed in ***Asking Questions of Survival*** leads to the detailed ***Rapid Assessment Mapping for Sustainability (RAMS)***, described earlier.

The answers to the questions and the analysis encapsulated in the maps needs to be turned into action. The arena for action for long-term impact is in influencing human behaviour. ***Asking Questions of Survival*** identifies three basic motivators for problematic human behaviour which can be translated into three basic strategic approaches:

- ***Ignorance—Aim for self-repairing systems.*** Repair and improve the processes of feedback between the components of society.
- ***Desperation—Offer practical choices.*** Wherever possible, rather than criticizing behaviour, present people with realistic alternatives.
- ***Greed—Encourage equitable development.*** Develop a political commitment to protecting society and the environment from individual greed.

It suggests that the reponses to these three problems are different. For example, there is little point having a programme of education if ignorance is not the problem.

# Tools and training materials

## Map Maker

Map Maker is Windows software for making maps and displaying data on maps. It has been designed to be used by non-experts while still having a sophisticated capacity for complex analyses of varied data. Map Maker was designed specifically for development projects and includes support for carrying out field surveys. The author of the software is making it available for free to non-profit institutions, students, and academics through Internet, mail order, and courses. It is currently in use in 40 countries. The project is using the Map Maker software in its field trials, is helping to make it available through the IUCN network of members, and is assisting in the production of training materials in English, Spanish, and French.

## Booklets

Draft booklets have been prepared as training and workshop materials on:

*Questions of Survival*
*Barometer of Sustainability: what it's for and how to use it*
*What are Strategies for Sustainability*
*Characteristics of Reflective Institutions*
*Mapping Sustainability*
*Monitoring and Assessment of Local Strategies for Sustainability*
*Community-based Indicators*
*Assessing Rural Sustainability: 25 steps*

The first two will be issued separately. The next three will be merged into ***Asking Questions of Survival***. The last three will be incorporated in the pair, ***Assessing Rural Sustainability*** and ***Planning Action for Rural Sustainability***.

## Visual aids

The Barometer of Sustainability, the Egg of Sustainability, and the Pyramid of Action (Figure 4) are visual aids to communicating key ideas for a common understanding of sustainability. The Pyramid of Action is designed to start people thinking about what they can do for themselves; and to reduce expectations of assistance from external agencies and governments.

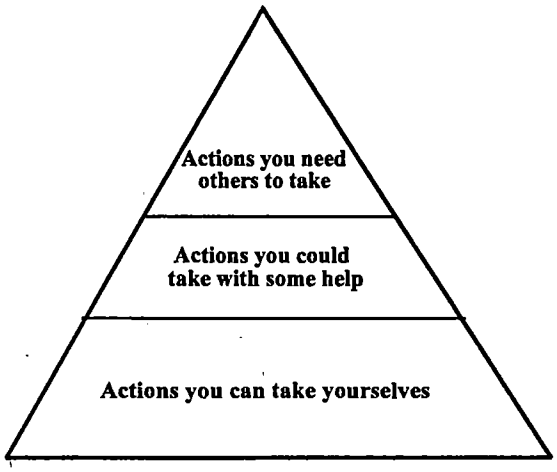


*Figure 4. Pyramid of action*

## Tools for Community Participation

Tools for community participation have been extensively developed and described in manuals for primary health care, agricultural research, and others. There are many publications on participatory techniques. *Tools for Community Participation* by Lyra Srinivasan published by UNDP in 1990 is one of the best.

# Field testing

## Sierra Nevada de Santa Marta, Colombia

The Sierra Nevada de Santa Marta, on the Caribbean coast of Colombia, is a complex region of outstanding ecological interest ranging from tropical forest to snow covered peaks. It has important archaeological remains and five unique groups of indigenous people. Unfortunately, it also has problems of drug trafficking, guerrillas, unauthorized logging, and pressure on land from settler farmers. In this context an NGO, the Fundacion Pro-Sierra Nevada de Santa Marta, has for the last decade been attempting to bring the diverse stakeholders together to search for achievable strategies for managing the Sierra Nevada. In addition, the Fundacion carries out fundamental research through ecological field stations and provides technical expertise to support the dialogue.

Through a series of workshops with the Fundacion, the project first explored the role that monitoring and assessment can play in the decision-making process of the Fundacion. Using as a focus three draft booklets, *Questions of Survival*, *Reflective Institutions*, and *What are Strategies for Sustainability?*, the senior staff of the Fundacion attempted to clarify their vision of the future for the Sierra Nevada, the questions they were trying to answer through their projects, and their ability as an institution to absorb and learn from the answers to those questions. This process helped the Fundacion to realize that monitoring and assessment could not be mere add-ons. If assessment is to be useful it needs to be a central element of the institutional ethos. This realization led to an institutional restructuring which encouraged greater reflection and communication.

Once the institutional context for meaningful assessment had been established the Fundacion's monitoring and assessment unit was able to focus more on the practical details of assessment. First this meant a reevaluation of the extensive store of data that had been collected over the previous decade. As with many development projects much of this data had been accumulated largely for the sake of having data. But now, armed with a clearer idea of the questions that were being asked, the data could be revisited to identify the data gaps. Only then was a detailed work programme in the field developed.

Work is now focusing on one municipality (an urban area with its rural hinterland). The emphasis is on RAMS and the producion of simple maps that can communicate diverse and complex knowledge in a way that can be widely and rapidly understood. Fundacion staff have been trained in the use of the Map Maker software. To increase the impact of the training, the opportunity was taken in a four-day training course to train staff from six field projects in Central America. By expanding the experience in this way it is hoped to enrich the process of feedback in the continuing development of RAMS.

## Tumkur, India

Development Alternatives (DA), an Indian NGO, is working with the District Government of Tumkur District in Karnataka State to develop a community-based strategy for sustainability. Through a programme of dialogues DA has discussed with villagers and government officials the issues that concern them. To all involved the overriding issue is water. With a growing population and more intensive agriculture the limited water supplies are even more strained and ground water levels are dropping. DA is using water as the key indicator of sustainability since a system can be sustainable only when water demand is matched by supply. Water also has the advantage of being understood by all.

The agronomists and engineers of DA have developed maps to describe their view of optimal land use in Tumkur. Meanwhile the community workers have worked with the villagers to develop conceptual maps of how they see future use of land around their villages. Inevitably the two maps are different. The challenge for DA and the District Government is to work with both the agricultural "experts" and the local community so that both maps may slowly evolve into a common perspective of the vision for the future. Only once that vision of a sustainable future has been established can progress be assessed.

In this approach the ability to make and modify maps easily and in the field is essential. Maps are the principal media for analysis, communication, and consensus. In the future, as the programme moves from analysis to implementation, maps will also be the key to project design, implementation, and monitoring. DA has developed a Resource Atlas which illustrates the state of the resource base for the region. This is being used as a project planning tool in Tumkur. In addition, to help develop a facility in map making IUCN supported a course, held in August 1995, on the use of the Map Maker software. The software is now being used in the field not only by DA but also by other local NGOs.

In addition, the booklet *Questions of Survival* has been translated into Hindi and Gujurati and used on an experimental basis by a number of small local NGOs. The booklet is used as a resource for workshops with village groups as a means of focussing the discussion and helping them to clarify in their own minds their situation with respect to their environment and their neighbours.

## District Environmental Action Plans, Zimbabwe

Zimbabwe is preparing District Environmental Action Plans (DEAPs) in up to eight pilot districts. The lead agency is the Department of Natural Resources, IUCN is providing technical assistance, and the project is funded by the United Nations Development Programme (UNDP). A national strategy team has been formed to help prepare the DEAPS, together with district strategy teams. These have been formed in the first three pilot districts: Umzingwane (Matebeleland South Province), Mberengwa (Midlands Province), and Hwange (Matabeleland North province).

Despite their name, the DEAPs are intended to be strategies for sustainable development. Their scope includes both human wellbeing and ecosystem wellbeing; and they will go beyond planning to include implementation. The strategies are being built from the ground up, starting in the villages.

Under the IUCN/IDRC assessment project, members of the international assessment team have been helping the national and district strategy teams develop and test a participatory method of assessing progress toward sustainability. IUCN's technical advisor to the project has provided training in Participatory Rural Assessment (PRA) tools and other members of the international team have provided training in using the tools to assess sustainability, the Barometer of Sustainability, indicators, and strategy development. The national and district strategy teams have conducted two-week assessments in villages in three of the districts (Umzingwane, Mberengwa, Hwange) and one-week action planning sessions in Umzingwane and Mberengwa. Assessments and action planning will resume in Hwange and other districts in 1996 once the main farming season is over.

This field testing has enabled the international, national and district teams to work out the basic questions that need asking to assess human and ecosystem wellbeing, ways of asking the questions that are meaningful for the villagers, and the step-by-step guidance

that is most helpful to the teams working with them. This information is distilled in the booklets, *Assessing Rural Sustainability* and *Planning Action for Rural Sustainability*.

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