INTEGRATING SUSTAINABILITY INTO AGROFORESTRY PROJECTS: A WORKSHOP FRAMEWORK FOR NGO PROGRAM MANAGERS

By

T. Anderson White

Manual No. 2, 41 pages, September 1993

For more information, contact:

T. Anderson White
Department of Forest Resources
College of Natural Resources
University of Minnesota
St. Paul, Minnesota 55108 USA

Tel: (612) 624-1224
Fax: (612) 625-5212

For copies of this publication, contact:

Ellen Maurer
Communications Director
EPAT/MUCIA-Research and Training
University of Wisconsin-Madison
1003 WARF Office Building
610 Walnut Street
Madison, WI 53705-2397 USA

Tel: (608) 263-4781
Fax: (608) 265-2993
Email: eamaurer@facstaff.wisc.edu

Edited by Aaron Williamson
Layout by Lesa Langan and Sharon Graham
Design by Lesa Langan

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PREFACE

In January 1990, Save the Children Federation (SCF) invited members of the Department of Forest Resources at the University of Minnesota to help with a workshop presentation, "Agriculture and Forestry for Sustainable Rural Development." University of Minnesota and SCF personnel presented these workshops to mid-career and NGO agriculture and forestry program managers from Central and Latin America. The workshop described in this document is a product of the University of Minnesota contribution to these training events. It was drafted as an EPAT/MUCIA document and draws heavily on related work from the Forest, Water, and Watershed Management Team.

The purpose of the workshop was to encourage NGO program managers to integrate sustainability into forestry project planning and management. Therefore, sustained impacts are treated as a basic goal of development. The workshop provides a sustainability-oriented framework to assess the following factors:

* context for sustainable rural development

* local needs and capabilities to achieve sustained development

* capability of the field office to support local action

During the workshop program managers produce:

* guidelines to assess local capabilities

* program recommendations for field office intervention

* recommended changes within their NGO to increase its ability to promote sustainable development.

This document familiarizes workshop coordinators with the rationale and concepts covered in the workshop but does not make specific recommendations for agriculture and forestry programs.

The author would like to thank Jon Jickling and John Nittler for their contributions to the design and implementation of the workshop.

INTRODUCTION

Workshop Rationale

Most forestry development workers agree that forestry and agroforestry projects have improved in the last decade. Many NGOs are shifting away from inappropriate methods and species and are employing more integrated and participatory strategies. Many projects now enhance traditional agroforestry practices, seek ways to manage tropical forests for sustained productivity, and expand cooperation between communities and governments to jointly manage public lands. Although many areas have improved, the failure to attain sustained impacts continues to plague and frustrate forestry development aid. This is a much discussed, debated and, unfortunately, elusive goal of development.

Unless targeted communities can sustain the benefits from intervention, NGO aid provides temporary relief at best. At worst, it is a waste of precious funds, confidence and ability. Despite admirable organizational goals, activities or behaviors started or catalyzed by projects often become unsustainable when outside aid ends. For example, a 1986 assessment of 212 USAID funded projects found 25 percent had poor prospects. Only 11 percent had a good chance of becoming sustainable after U.S. aid stopped (USAID 1988). Some reasons why NGO projects fail to achieve sustained impacts include:

Inadequate Local Assessments

Pre-project assessments frequently ignore or improperly estimate local knowledge, institutions, and capabilities for development. Project monitoring and evaluation, which take place during implementation, often repeat these weaknesses. Such assessments cause inappropriate design and ineffective projects.

Institutional Constraints

Development workers in both recipient and donor institutions often know and understand the requirements for sustained impacts. Internal constraints, however, often impede effective use of such knowledge (Gregersen and Lundgren 1990).

Project Approach Limitations

Though development is a long-term process requiring long-term commitments, short-term projects provide most of development aid for agriculture, forestry, or health. NGOs that accept project aid contend with short-term (and sometimes conflicting) project goals and periodic tight budgets. The immediate need to reach project targets often sacrifices well-conceived, long-term sustainability goals. However, NGOs that operate solely on long-term, private funds can create local dependencies that hinder transition to local management (Lecomte 1986).

All NGOs that rely on outside funding face transition problems when that aid ends. Unfortunately, it is only at this critical point that some organizations finally pay serious attention to sustainability. By then it is often too late to act effectively.

NGOs must take proper action at the earliest stages of the project if local communities are to continue to benefit from the assistance.

Therefore, unless the current project approach changes, all NGOs face managing short-term projects to achieve long-term sustainability. This is undeniably a difficult task. How can NGOs do this more effectively? How can they improve local assessments, program interventions, and their own organizations to assure that benefits continue when NGOs reduce support or pull out?

Workshop Purpose and Outputs

The workshop's purpose is to encourage program managers to integrate sustainability into forestry project planning and management. During the workshop, achieving sustained impacts is temporarily treated as the basic goal of development aid. The workshop is a sustainability-oriented framework from within which to assess the following factors:

* the context for sustainable rural development,

* local needs and capabilities to achieve sustained development,

* field office support for local action and their capabilities to provide that support.

Workshop participants can produce:

* specific guidelines to assess local capabilities,

* program recommendations for field office intervention,

* recommendations for institutional changes to increase their NGO's ability to promote sustainable development.

Key Workshop Themes

The workshop promotes the following key themes concerning the role of NGOs in promoting sustainable development through forestry projects:

* Concentrate on assuring the continuity and diffusion of project-initiated benefits and anticipate negative side-effects when designing, assessing, or managing projects (Gregersen and Lundgren 1990).

* Thoroughly assess local development capabilities before any project begins. Continue assessments throughout implementation, with careful attention to indicators of nonsustainability (Eckman 1989).

* Projects should complement and enhance local capabilities. This enables local people to become better problem solvers, innovators, managers, and conveyers of technology. This is essential for a smooth transition to local management when outside funding ends and assures a sustained, locally-driven, development.

* Agroforestry and forestry innovations (both technical and social) should incorporate indigenous knowledge and technology. NGOs should develop and promote these innovations in an participatory, beneficiary-driven fashion. This process should also stimulate further innovation and adoption beyond the site of immediate impact.

* NGO presence in communities is temporary and has limited funds (as do the communities) that vary unpredictably. During NGO tenure, it is more important to set up a solid foundation and the right direction for development rather than achieving many easily identified outputs.

* NGOs should identify, reduce, or remove internal organizational constraints (and/or recipient institutions) that hinder the use of methods which could lead to long-term improvements.

Workshop Framework

Mechanics and Structure

The workshop follows the normal project planning process (table 1). Participants will identify and assess local problems, alternative solutions, gaps in local capacity to undertake those solutions, and appropriate NGO intervention. Participants will focus on the elements of sustainability throughout this process. The workshop consists of a three-module set and 12 sessions that participants can complete in five days. Workshop coordinators can alter module and session order according to specific participant needs.

The workshop includes one field orientation and two field exercises. These exercises focus on technology development and extension strategy analysis, diagnosis, and design. The strategies deserve special attention because weak technology development and extension methods are a common cause of nonsustainability. Training coordinators should also localize case studies for each lecture and discussion session. This workshop framework includes an introduction, goals, a suggested training approach, and suggested lecture and discussion content for each session.

Modules and purpose

Module I: Assess the context for sustainable rural development. Be sure participants understand basic problems and opportunities that define the context for sustainable development before they construct ways to intervene. This module will build a foundation

for the workshop by identifying, and defining:

* sustainable development and its critical elements;

* the role of forestry, agroforestry, and watershed management interventions in sustainable development;

* the limits of common implementation strategies and the project approach.

Module II: Identify local needs and assess capabilities to achieve sustained development.
Inadequate assessment often results in unsustainable and ineffective projects. Therefore, it is important to use a sustainability-oriented method. Module II provides a framework to:

* identify characteristics and needs of intended beneficiaries and the underlying institutional causes for those needs,

* identify alternative solutions to overcome the problems,

* assess gaps in local capabilities that prevent sustained development.

Module III: Assess field office administrative support for local action and its capability to provide that support.
Determining appropriate NGO action is the final step in integrating sustainability into planning and management. Module III establishes and uses a sustainability framework to assess:

* strengths and weaknesses of current programs,

* changes in institutions and capabilities for effective programs,

* needed institutional arrangements for NGOs to promote sustainable development.

Table 1. Workshop process: NGO intervention for sustainability assessing problems and constructing guidelines

Module I
Session 1-4
Planning and Management Process Sustainability Goals

Discussion

Assess the context for sustainable development

Insure continuity of project benefits

Increase diffusion of project benefits

Avoid negative side-effects

Module II
Session 5-6 7 8
Planning and Management Process Sustainability Goals

Discussion

Identify issues and problems

Assess alternative solutions

Assess gaps in local capabilities to implement solutions

Insure continuity of project benefits

Increase diffusion of project benefits

Avoid negative side-effects

Module III
Session 9-10 11 12
Planning and Management Process Sustainability Goals

Discussion

Design NGO programs to fill gaps

Assess NGO implementation needs

Construct guidelines for future action

Insure continuity of project benefits

Increase diffusion of project benefits

Avoid negative side-effects.

MODULE I: ASSESS THE CONTEXT FOR SUSTAINABLE RURAL DEVELOPMENT

Session 1. Assess Implementation Strategies. (Field Orientation, 8 hours)

Introduction

To generate useful guidelines during the workshop, participants must understand common problems encountered in forestry projects.

This session shows participants projects that use different implementation strategies and starts discussion on their strengths and weaknesses. The activities and debates generated from this session serve as a reference and departure point for future workshop discussions. This field session also provides an informal social occasion for participants to get acquainted.

Objectives

* Review common problems in forestry and agroforestry projects ("e.g." low adoption or maintenance rates, nonsustainable activities after the project ends).

* Help participants recognize:

-- key variables affecting sustainability

-- strengths and weaknesses of different implementation strategies

-- strategies able to sustain benefits when the project ends.

Approach

Select several forestry projects, preferably using substantially different implementation strategies, near the training site. For example, have participants visit a project that uses "food for work" incentives to promote adopting agroforestry technologies. Another could be one that uses no monetary or commodity incentives.

For each project, pose questions such as:

* What are the indicators of non-sustainability?

* How do we know when to consider them?

* What are project strengths and weaknesses?

* What happens after the project ends?

* Who benefits, who does not, how much, and why?

* Will the incentive to plant trees or adopt promoted technologies continue after the project ends?

* What will farmers continue to do after the project?

* How can you improve each project?

Suggested Lecture/Discussion Content

During the field exercise, cover the three broad causes for project weakness as presented in the introduction:

* inadequate local assessment

* institutional constraints

* limitations of the project approach (see Session 4 description for more material)

Also present and lead discussions on the idea of primary indicators of non-sustainability: low participation, inadequate institutional capacity, inappropriate costs, and benefit distribution.

Session 2. What is Sustainable Development and What Are Some Critical Elements? (Lecture/Discussion, 2 hours)

Introduction

There are many different definitions and interpretations of sustainable development. Often, development workers define project "success" or "good" development using sustainability concepts. In this workshop (as with any NGO), coordinators and participants need to agree on a definition of what sustainable development is and the essential elements to achieve that development. Otherwise, the resulting program guidelines and interventions will be theoretical and ineffective. Participants must understand basic sustainability concepts because later workshop material stems from this session.

Objectives

* Jointly agree on a definition for sustainable development and its critical elements.

* Help participants evaluate their own work using the critical elements of sustainable development.

Approach

The term "sustainable development" is in the language and documents of most NGOs. Therefore, it should not be difficult for participants to construct a definition. To identify critical elements of sustainability (listed below), ask participants leading questions such as, "How do you know when you achieve sustainable development? What is the difference between development and sustainable development?" List discussion results on flip charts, and post them up for reference.

Lecture/Discussion Content

Gregersen and Lundgren (1990) defined sustainable development as "development involving changes in the production and/or distribution of desired goods and services which result, for a given target population, in an increase in welfare that can be sustained over time." They identify these critical elements of sustainable development:

* continuity of benefits after project ends,

* diffusion of benefits beyond project boundaries,

* avoiding negative and unintended side effects (externalities).

The failure to achieve these goals marks most unsuccessful projects. Therefore, this workshop encourages participants to rate these three elements in analyzing their current agriculture and forestry efforts (see figure 1).

Continuing Benefits When the Project Ends
To sustain the benefits generated by the project, activities (ideas, resources, technologies or institutions) must continue when the project ends. Development efforts are ineffective if goods and services diminish after the development organization leaves the area. Local capacity to manage and support activities, sustain related recurrent costs, and respond to new problems is vital to achieve continuity.

Spreading Benefits Beyond Project Boundaries
To achieve sustained development, diffusing benefits is critical. Spreading and adopting improved technologies or behaviors in the immediate project target area is usually the goal of extension programs. Yet, if proposed practices do not diffuse beyond the immediate impact area, NGO intervention will only have a limited, micro-level effect. Micro-level effects are also more susceptible to the winds of socio-political and economic change. To realize the full potential of NGO intervention and assure permanent benefits, projects should include mechanisms to diffuse benefits beyond project boundaries.

Avoiding Negative and Unintended Side-Effects (Externalities)
There can be many negative externalities or unintended side-effects of development aid that can destroy the NGO initiative. There are four kinds. Downstream flooding caused by poor upstream land use is an example of a physical externality. Local dependency on commodity or monetary aid for collective action is a social externality. Agricultural price supports for an environmentally degrading crop demonstrates an economic externality. Killing important pest predators through uncontrolled use of pesticides creates a biological externality. Side-effects can not only affect immediate development impact area but also surrounding areas linked socially, economically, or physically. If administrators do not know about potential side effects or choose to ignore them, these externalities may ruin project efforts.

Figure 1. Example of considerations in achieving sustainable development: spatial (beyond the boundaries directly impacted by the project) and temporal (beyond the life of the project) (Brooks "et al." 1989: 11)

	Space Dimension	
Time Dimension	On-Site	Off-Site
Project Begins	Forestry Project Practices and Effects	Effects of Off-Site Externalities: effects of project activities on downstream communities
During Project		Diffusion: of project concepts, technologies, practices to other areas.
Project Ends		

After Project	Continuity: of forestry practices, technologies, and effects after the project ends.

Session 3. What is the Role of Forestry, Agroforestry, and Watershed Management in Sustainable Development? (Lecture/Discussion, 3 hours)

Introduction

Forestry can play a big role in sustainable development, but sometimes development planners oversell it. Before moving ahead in the seminar, participants should investigate and clarify actual and potential roles of forestry activities in local development. This discussion will help participants see both the range of opportunities and limitations to NGO intervention in the forestry sector. Participants need to understand these topics before integrating sustainability considerations into project planning and management.

Objectives

* Show the real and potential role of forestry, agroforestry, and watershed management in achieving sustainable rural development.

* Enable participants to evaluate and describe how forestry activities can support or undermine rural development.

Approach

Begin a discussion on the topic by asking lead-in questions. Complement ideas volunteered by participants with examples and case studies.

Lecture/Discussion Content

Most NGO target populations depend directly on natural resources (soil, water, animals, vegetation) for subsistence. Unfortunately, population pressures, inequitable land distribution, and planned resettlements cause many rural people to exist on fragile lands not suited for intensive use. Also, they often rely on resources that are limited. The abuse and misuse of these resources maintains or worsens poverty and thwarts future land-use options. Forestry interventions make a specific contribution to sustainable development. Trees are a renewable resource that, when managed well, can assure steady production and profits for small farmers. Figure 2 shows specific on-farm benefits from trees in the farming system.

Forestry and watershed management interventions contribute to rural development by:

* increasing domestic fuelwood supplies, reducing labor and monetary expenditures for fuel gathering;

* increasing or sustaining crop yields by decreasing wind speeds ("e.g." shelterbelts), improving soil fertility and decreasing soil erosion ("e.g." contour hedgerows);

* improving livestock production by providing fodder and live fencing for animal management ("e.g." pastoral agroforestry systems);

* developing micro-enterprises and rural employment ("e.g." wood-based artisan industries, honey production "etc.");

* increasing availability of construction wood. Standing trees also serve as capital stores, reducing a farmer's vulnerability to financial emergencies;

* reducing or regulating damage from rain and small floods by increasing upland moisture retention. This also decreases downstream damages;

* improving water quality for drinking and other uses;

* improving household food security by providing fruit during "hunger seasons."

Figure 2. On-farm benefits from trees in the farming system (Gregersen 1988: 24)

Session 4. What Are the Limitations of Conventional Methods of Technology Development and Promotion and the Project Aid Approach? (Lecture/Discussion, 3 hours)

Introduction

An overview of project approach limitations was presented during the workshop introduction and field orientation. At that time, participants should have discussed the strengths and weaknesses of various methods of technology development and extension. By now, participants should be aware of major problem areas and be prepared to investigate them further.

Some projects have promoted sophisticated research station technologies, or they planted "miracle" tree species that do not respond to the diversity of specific human and environmental conditions usually targeted by NGOs. Projects have often relied on monetary and commodity incentives not sustained beyond the project. Technicians often look for opportunities to use familiar "technology package" solutions, rather than learn local conditions, needs, and capabilities to design a technology development program.

Workshop participants should recognize the need to treat farmers as true partners by jointly diagnosing situations, sharing knowledge, and developing and transferring technologies. Only through participatory problem solving will local people sustain the management of change beyond the project. This discussion completes the context assessment for sustainable rural development.

Objectives

* Identify and investigate the strengths and limits of conventional technology development and promotion methods and the project aid approach.

* Inform participants that conventional approaches sometimes fail to integrate or complement local knowledge, and are therefore unable to use or catalyze local capacity for development.

* Enable participants to evaluate projects and strategies about their potential to promote development and make the proper recommendations.

Approach

Briefly lecture on different ways to promote and develop technology, and discuss the strengths and weaknesses of project aid sustainability. Then present case studies of different project and technology development approaches. Finally, lead participants in an analysis of the studies, distilling lessons learned, and basic recommendations for change.

Lecture/Discussion Content

Approaches to Technology Development and Promotion

As financing for agriculture has usually been greater than for forestry, agricultural development has strongly influenced forestry and watershed management programs. Technology development and promotion methods have also been similar. This is especially true on the NGO level since NGOs often employ agronomists and target farmers. For this reason, be sure to review the principal movements in agricultural development.

The Green Revolution

This major agricultural development movement, which began in the late 1950's, substantially contributed to agriculture and national development in some developing countries. Agricultural development workers operated on the premise that "significant increases in output cannot be obtained by reallocating existing resources, but only through technological change that fundamentally restructures the productivity of those resources" (Dommen 1988).

Farmers increased productivity by restructuring farming systems and introducing technologies like irrigation, high-yielding cereal varieties, and synthetic fertilizers and pesticides. Research groups, agricultural extension systems, and educational

programs that promoted this view of agricultural development became institutions. The green revolution became convention and continues to pervade agriculture and forestry programs.

Unfortunately, only farmers with ready access to stable supplies of land, labor, and capital could acquire many of the new technologies. Most new agricultural technology bypassed farmers in Africa, the Caribbean and Latin America. Even now, most official institutions do not develop new technology for needs and characteristics of small-holder agriculture. Instead, innovations frequently increase the gap between rich and poor (Miller 1977).

Farming Systems

And, during the 1970s, the farming systems research and extension (FSR/E) approach, evolved. The weaknesses of applying conventional agricultural research and extension technologies and methods to small holders in developing countries became apparent.

This approach is "farmer oriented, involves the client group as participants in the research and extension process, recognizes the regional specificity of technical and human factors, tests technologies in on-farm trials and aspires to complement but not replace conventional research" (USAID 1989).

Though praised as more appropriate for small farmers than conventional approaches, USAID found most of its recent FSR/E projects did not achieve expected impacts. It failed, not from a conceptual weakness, but because the FSR/E concept was not well defined or understood by conventionally-trained technicians. Evaluators also noted that projects did not use a problem-solving approach to system diagnosis and technology design.

Farmer First

A small, but growing group of scientists recently extended the change started by FSR/E proponents. They noted the wealth of indigenous agricultural and forestry knowledge and the legacy of farmer innovation and adaptive strategies (Chambers "et al." 1989). They do not try to orient technology from research stations. Instead, they attempt to "empower farmers to learn, adapt and do better; analysis is not by outsiders ... but by farmers and farmers assisted by outsiders; ... what is transferred by outsiders to farmers is not precepts but principles, not messages but methods, not a package of practices to be adopted but a basket of choices from which to select." (Chambers 1989). These "farmer first" proponents try to sustain improved rural welfare by building local capacity to analyze problems and devise solutions. Small farmer development is more a question of avoiding problems by adjusting local resources rather than imposing technologies that require many changes in previous practices. Also, agriculture and forestry development should minimize risks and vulnerability to problems rather than maximizing output. Gupta (1989) noted that it is the attitudes of scientists, researchers, and extension specialists that prevent effective interaction with farmers in India.

Limitations to the Current Project Aid Approach

As described in the Introduction, it is inconsistent to approach long-term development challenges with short-term project solutions. The Project Aid Approach has a long list of short-

comings. A short version includes:

* Outside groups usually plan projects and do not respond to local requests for help.

* Farmers rarely have a voice in project design because no one effectively communicates their needs, capacities, and priorities to project planners.

* NGO presence in a community is temporary. The demand of project funding provides strong incentive to show impressive, quantifiable short-term goals. This prevents wise planning and solid construction of a positive foundation and direction to achieve long-term goals.

* Projects often produce a patron-client relationship with farmer beneficiaries depending on the NGO for leadership, resources, and links to external opportunities.

* Changing levels of internal and external NGO funds are uncertain and make it difficult to transfer responsibility to local management.

Many NGOs have devised structures and methods to avoid these problems. Gregersen and Lundgren (1990) specifically emphasize the need to:

* avoid nonsustainable activities, such as actions or institutions that rely on outside incentives or resources. It is often easier to identify and avoid negative effects than to identify sustainable actions.

* identify and monitor indicators of nonsustainability. These include poor participation, low rates of technology adaptation and local innovation, and high rates of erosion or sedimentation. (Eckman 1989).

* be flexible in project planning and management. Make contingency plans; offer diverse programs; and encourage innovative and resilient organizations and people.

* recognize that sustainable benefits rather than sustainable projects are the development goal.

* realize that the correct direction of change ("e.g." in local land-use behavior, or institutions) is more important than the size of change catalyzed by the NGO.

MODULE II: IDENTIFY LOCAL NEEDS AND ASSESS CAPABILITIES TO ACHIEVE SUSTAINED DEVELOPMENT

Session 5. Who Are Our Intended Beneficiaries and What Are Their Problems? (Lecture/Discussion, 2 hours)

Introduction

Before discussing solutions, workshop participants (like project planners) will identify and assess the characteristics of beneficiary farmers, their needs, and the underlying causes for those needs. In actual projects, NGOs should have farmers explain their own problems, and participate in the planning process. Often, there is a difference between what farmers think they need and what development workers think they need. During the workshop, participants need to study and discuss such differences. Participants should include problems "felt" by locals and those identified by development workers.

Objectives

* Identify general characteristics of beneficiaries and their problems in attaining sustainable development.

* Recognize that NGO target populations often exhibit characteristics of the "complex, diverse, and risk-prone" group (table 2) identified by Chambers (1989).

* See how beneficiary problems relate to the three goals of sustainable development.

Approach

Exercise 1
Discuss the characteristics and general problems facing NGO beneficiaries. Have participants write a short description of common beneficiary characteristics and list common problems. The characteristics should include occupations and descriptors such as risk-prone and landless. The list of problems could include:

* declining availability of fuelwood,

* declining agricultural production,

* increasing landlessness or emigration.

Have participants write responses on flip charts as a handy reference to assure that recommendations are appropriate and possible.

Table 2. Summary of three types of agriculture

	INDUSTRIAL
Main locations	Industrialized countries and specialized enclaves in the Third World
Main climatic zone	Temperate
Major type of farmer	Highly capitalized family farms and plantations
Use of purchased inputs	Very high
Farming systems	Simple
Environmental diversity	Uniform
Production stability	Moderate risk
Current production as percentage of sustainable production	Far too high
Priority for production	Reduce production
	GREEN REVOLUTION
Main locations	Irrigated and stable rainfall, high potential areas in the Third World
Main climatic zone	Tropical
Major type of farmer	Large and small farmers
Use of purchased inputs	High
Farming systems	Simple
Environmental diversity	Uniform
Production stability	Moderate risk
Current production as percentage of sustainable production	Near the limit
Priority for production	Maintain production
	COMPLEX, DIVERSE AND RISK PRONE
Main locations	Rainfed areas, hinterlands, most of sub-Saharan Africa, "etc."
Main climatic zone	Tropical

Major type of farmer	Small and poor farm households
Use of purchased inputs	Low
Farming systems	Complex
Environmental diversity	Diverse
Production stability	High risk
Current production as percentage of sustainable production	Low
Priority for production	Raise production

Source: Chambers "et al." 1989. As adapted from The Brundtland Commission Report (WCED 1987: 120-2).

Exercise 2

Separate participants into small groups and have them assess the causes of each identified problem. Participants will examine these problems in each of the following workshop sessions. Help them remember the three critical elements of sustainability during the assessment. To encourage discussion, separate local problems into three broad categories: knowledge and technology, institutions, and resources (see table 3). The knowledge and technology group, for example, would include farming practice problems, local attitudes, and perceptions towards change. The institutions category includes problems with local rules (formal and informal), land tenure arrangements, and social organizations. The resource area includes problems with different resources available to the client population, such as land, fertility, forest, credit, and links to external markets.

Each participant group should ask: What are the underlying causes of the problems? How do the causes limit a beneficiary's ability to attain sustained impact and innovation? Are causes in the areas of resources, institutions, or knowledge? Are these causes related to the failure of achieving continuity and diffusion of benefits? How do they relate to negative externalities?

Periodically visit each group to be sure that they understand the task. Also encourage participants to draw upon their own agricultural and forestry project experience. After groups present their findings for review, lead a summary discussion.

Lecture/Discussion Content

Describe characteristics of the general target population. Make sure that participants cover the items on this list during the discussion. Have participants then describe local problems that prevent sustained impact or innovation.

Poverty

Though obvious, development workers often overlook the effect that poverty has on possible welfare enhancing alternatives. For

example, low budgets might keep individuals, households, or communities from acting alone, forcing them to use collective action or joint resources as a dominant survival strategy (Runge 1986).

Natural Resource Dependent
Since the 1970s, most agricultural and forestry projects have targeted rural populations who depend directly on natural resources (soil, vegetation, animals and water) for subsistence. For many political and demographic situations reasons, governments often distribute resources unfairly, forcing the poor to extract products from fragile lands.

Risk-Prone
Common problems of farmers include decreasing crop yields from soil erosion, less fuelwood available from increased demand, unstable markets, and land tenure and sub-division issues. Farmers are particularly vulnerable to changes in production, markets, and politics because they have limited access to regular sources of capital, labor, and resources. Rather than manage holdings for profit or yield maximization, the rural poor use complex, risk avoidance strategies to survive.

Diverse Needs, Capabilities, and Goals
Contrary to popular belief, the poor are not homogeneous; their needs, desires, and capabilities to act vary enormously. For example, because of variations between agricultural lands, available labor, and capital, farmers often have to adopt the cheapest, simplest, and most immediately-satisfying technology.

No Political Power
A variety of strong socio-political reasons often excludes intended farmers from national development. Frequently, they are illiterate and have poor organization, communication and administrative skills. Also, they often have irregular and limited access to the main elements of production: land, labor and capital.

Table 3. Assessing local problems

Problems	Causes of Problems			
	Knowledge and Technology	Institutions	Resources	
1.				
2.				
3.				
4.				
5.				

Session 6. Diagnose Farming Systems. (Field Exercise, 3 hours)

Introduction

Farmers often do not use many introduced forestry technologies after the project ends because they were never appropriate. Often, the use of external incentives, such as food for work, mask farmers' personal perception of technology. Frequently, we only learn what they think after the project ends. Poor assessment of conditions, technology development, or promotion strategy can result in inappropriate technology. Obviously, critical first steps in finding the right solution include a thorough diagnosis of local farming systems and a clear statement of the problems and opportunities.

Historically, project developers have not spent enough time on local diagnosis. For this reason, the workshop dedicates a field session to this exercise. Recently, suggested methods have included rapid rural appraisal, participatory rural appraisal, and agroforestry diagnosis and design. Since this workshop focuses on agroforestry, we suggest the agroforestry diagnosis method developed and described by J.B. Raintree for this exercise (Raintree 1977).

When a project conducts an assessment, get all beneficiaries to help diagnose and design the technology. Farmers usually know much more than we realize. Their specific conditions and management goals often require a specially tailored response.

Objectives

* Learn how to assess a farming system.

* Learn how to tailor the project so that it complements positive aspects of farmers' existing systems so they can replicate it on different sites.

Approach

Divide the participants into groups of four people. Assign each group a local family and farm. Have the group first assess how the farm system works, how it is organized, and how it uses available resources (including labor and capital) to achieve the farmers' management goals.

Then have each group assess how well the system works, the problems, constraints, and opportunities for improvement (Raintree 1987). It is especially important to discover indigenous technical knowledge, perceptions, and attitudes related to land management and technical innovation. Existing technical knowledge and traditional practices can provide clues for where and how the NGO could intervene to enhance the system.

Session 7. What Are Alternative Solutions to Farmer Problems? (Working Exercise, 2 hours)

Introduction

Most people start thinking about potential solutions after they identify a problem. Both farmers and development workers go through this exercise, sometimes formally and sometimes informally. People usually weigh the strengths and weaknesses of each alternative to see if it will be feasible and effective in resolving the problem.

In this session, have participants assess alternative solutions to farmer problems (identified in Exercise 2 of Session 5) for feasibility and effectiveness of attaining sustainability goals. After we understand program alternatives, we can assess local capabilities to deal with the problem (Session 8) and consider the proper NGO intervention (Module III).

Objective

* Assess alternative solutions to farmers' problems identified earlier for their ability to achieve sustained impact and innovation goals.

* Enable participants to evaluate their own programs for sustained impact and innovation goals.

Approach

After a brief introduction, separate participants into small groups. Have each group assess program alternatives (from Session 7) for one problem identified in Session 5. Use the framework illustrated in table 4 to assess the alternatives. Again, have participants assess the knowledge, resources, and institutional aspects of each problem and alternative. Ask participants, "How would the alternative affect the sustainability goals?"

Some alternatives, for example, obviously promote continuity ("e.g.", training local farmers in direct seeding techniques), while others could hinder continuity ("e.g." providing commodity payments for tree planting). Also have participants assess alternatives for diffusion and ways to avoid negative side-effects. For example, commodity incentives might speed diffusion but create dependency on outside incentives for action (a negative side-effect). Training some, but not all local farmers, might divide the community (a negative side-effect). This alternative might also encourage trained farmers to depend on the NGO. Participants should ask these kinds of questions for each alternative.

Table 4: Assessing alternative solutions to problems (one table for each potential solution)

Sustainability Goals

Capability Factors

Knowledge and Technology Base
Resources
Institutions

Insure continuity of project benefits

Increase diffusion of project benefits

Avoid negative side-effects

Session 8. What Are the Gaps in Farmers' Capabilities to Overcome Their Problems and Sustain Development? (Working Exercise, 3 hours)

Introduction

Because inadequate assessments often cause aid failures, it is important to understand local conditions before any project action. Now that we have a short list of ways to resolve some farmer problems, we can ask, "What gaps exist in local capabilities that prevent farmers from achieving sustained development? What indicators of nonsustainability should the project monitor?"

Objectives

* Enable participants to use a framework for assessing local capabilities to sustain development.

* Analyze the local community and farming systems to determine the institutions, resources, knowledge, and technologies that merit NGO support.

Approach

Exercise 1
Have participants use the framework illustrated in table 5 for this assessment. Divide participants into small groups. Have each group focus on one beneficiary problem identified in Session 5. Participants should identify and discuss key gaps in each capability category (knowledge and technology, resources, and local institutions). These areas affect farmers' ability to resolve the problem and achieve the three sustainability goals (continuity, diffusion, avoiding negative side-effects). Participants should also identify potential nonsustainability indicators. These indicators serve as early warning signals, implying negative results if the project does not change course or attack the problem. Such indicators must be specific and quickly and easily verifiable and quantifiable (Eckman 1989).

Tables 6, 7, and 8 show examples of factors that projects should consider when assessing each alternative. Periodically visit

each group to make sure they understand the task. Encourage participants to refer to their own specific agriculture and forestry project conditions and work with concrete examples not abstract suppositions. After the small group discussions, have each group present its results and a general analysis of its findings.

Exercise 2
Again form three groups for the second exercise. Have one group address the question of "how" to assess these factors. This group discusses and recommends ways to integrate the local capability assessment into current NGO project preparation and implementation. The second group refines and expands the list of assessment factors. The third group does the same for the list of nonsustainability indicators.

Table 5. Identifying gaps in local capacity

Acceptable Solutions

Factors of Local Capacity

Knowledge and Technology Base
Resources
Institutions

1. Continuity
   Diffusion
   Avoiding Negative Externalities

2. Continuity
   Diffusion
   Avoiding Negative Externalities

3. Continuity
   Diffusion
   Avoiding Negative Externalities

Table 6. Continuing benefits after the project ends and sample questions to assess local capabilities

Factors to Consider

Knowledge and Technology Base

* What do local people know about agricultural and forestry practices and species?

* What are simple, low cost techniques that are easy to improve and adopt?

* What are farmers' attitudes toward local innovation?

* What do NGOs know about local politics and power?

Resources

* What is access and availability of land, labor and capital?

* What are the trends of major resources?

* What inputs are locally available?

* How does access to these resources change seasonally?

* What groups have access to resources and which do not?

Local Institutions

* What is condition of land and tree tenure?

* What are prices of inputs and outputs?

* What is the market structure?

* How do people choose leaders?

* What is level of local literacy and education?

* What is the level of management competence and of accountability?

* Are conflict resolution mechanisms in place?

* What is the influence of authority?

* What are local laws and the political climate?

* What is status of cooperation and who are the "accelerators?"

Indicators of Nonsustainability

Knowledge and Technology Base

* Locals see the promoted technology as sophisticated or alien.

* There is no maintenance of project interventions.

* Limited farmer innovation and research capacity.

* Local innovations and management held in low esteem.

Resources

* Limited resources required for activity.

* Soil erosion is prevalent.

* Forest products are scarce.

* Agricultural yields are declining.

* A high reliance upon imported materials (supplies and germplasm) exists.

Local Institutions

* There is no local "ownership" of project action.

* There is low level participation in activity planning and management.

* There are low levels of participation in problem identification, solutions, and resolution.

* There are negative incentives to produce or participate.

* Project action does not represent all classes and factions.

* No respected local leaders are participating.

* Monetary and commodity incentives are used.

* People depend on the project for leadership, support, and innovation.

Table 7. Continuing benefits after the project ends and sample questions to assess local capabilities

Factors to Consider

Knowledge and Technology Base

* What are similarities and differences in knowledge and technology bases between adjacent areas?

Resources

* Are resource levels and characteristics the same as in area where technology was developed?

* Will the technology adapt to different resource levels and characteristics (land capability, labor constraints and capital)?

Local Institutions

* Many issues are the same as noted in the continuity section.

* What are interactions with adjacent institutions?

* Are there potential conflicts between local and adjacent institutions?

* Do prices and incentives vary between regions?

* Are there ethnic, class or faction differences between the project and adjacent sites?

Indicators of Nonsustainability
Knowledge and Technology Base

* No linkages exist for the transfer of knowledge

* No local leaders (individuals or groups) assume project patron and promoter role.

Resources

* Resources and benefits from intervention are not distributed fairly.

* Reliance upon external resources limits local flexibility to adapt and innovate.

Local Institutions

* No communication channels exist between institutions to diffuse information.

* No institutional ownership or enthusiasm for project intervention.

Table 8. Avoiding negative and unintended side-effects and sample questions to assess local capabilities

Factors to Consider

Knowledge and Technology Base

* Is there an understanding of upstream/downstream relationships?

* What are the physical, social, biologic and economic impacts of technologies and interventions?

* Are benefits distributed in a locally appropriate manner?

* Do some technologies have fewer negative side-effects than others?

Resources

* Do existing technologies have negative side-effects on local and adjacent resources?

* How do technologies affect the agroecological system?

Local Institutions

* Will there be negative impacts on institutions beyond project boundaries?

* Will creation of new products or markets affect adjacent institutions?

* Will incentives or external input encourage dependency?

Indicators of Nonsustainability

Knowledge and Technology Base

* There is no local collaboration in resolving common environmental problems.

* People depend on the project or research institution for innovation or guidance.

Resources

* The project is damaging resource levels.

* Resources and authority become centralized.

Local Institutions

* "Limited economic pie" attitude is prevalent.

* All local factions, classes, and authorities do not support the project or action.

* Project institution leads problem analysis, solution proposal, and implementation of the resolution strategy rather than adapting to local participation.

MODULE III: ASSESS FIELD OFFICE SUPPORT FOR LOCAL ACTION AND ITS CAPABILITY TO PROVIDE THAT SUPPORT

Session 9. How Can Programs Be More Effective? (Working Exercise, 4 hours)

Introduction

At this point in the workshop, participants have:

* assessed the context of rural development,

* defined the critical elements of sustainable development,

* assessed the capabilities of farmers to overcome their problems.

The workshop now focuses on current and future NGO intervention to support local efforts. Participants also will construct program guidelines that reflect the basic elements of sustainability. What should the NGO do to support local action complementing local opportunities and limitations to achieve sustainability? How can NGOs organize their forestry activities to assure some sustained benefit after the project closes? How can NGOs best manage short-term projects for long-term goals?

Objectives

* Develop guidelines for future field office action for each project component, precisely considering the three critical elements of sustainability.

* Enable participants to construct a similar set of guidelines to improve their own forestry programs.

Approach

Exercise 1
The goal of this exercise is to get participants to determine technologies and strategies now used by NGOs (or projects) represented at the workshop. Participants can analyze their current activities to see how they are contributing to sustained impact and innovation. After a brief introduction, divide participants into three working groups (one for each element of sustainability). All groups will determine what their projects do to accomplish their sustainability element. Each group should consider all common project components ("i.e.", technology development, extension, training, credit, monitoring and evaluation) (see table 9). Have the groups list and describe the activities in each project category that affects their particular sustainability element.

Participants should go into as much detail as time allows. They should be specific about how to gain and encourage community participation, what incentives to use, and what plans the NGO or project has for post-project transition. After each group presents its results to all participants, lead a discussion on the strengths and weaknesses (in light of sustainability goals) of each topic. Have participants list discussion responses on flip-charts for reference during the following session.

Exercise 2
Divide the participants into three groups according to the elements of sustainable development ("e.g.", table 9). Direct each group to make specific recommendations for every project component. Their recommendations should "fill" the gaps in local capability to achieve sustained impacts. See tables 10, 11, and 12 for examples of potential recommendations.

Table 9. Assessing NGO intervention for sustainable development

Sustainability Goals	Technology Development	Promotion and Dissemination	Credit
Insure continuity of project benefits			
Increase diffusion of project benefits			
Avoid negative side-effects			

Sustainability Goals	Training	Monitoring and Evaluation
Insure continuity of project benefits		
Increase diffusion of project benefits		
Avoid negative side-effects		

Table 10. Continuing benefits after project ends and samples of NGO program interventions

Technology Development

* Promote local tree propagation and germplasm production.

* Identify local knowledge and technology base,levels and use of resources and assets.

* Complement local capabilities to develop proper technologies.

* Use procedures approaches that are simple and show actual and perceived short-term economic returns.

* Use locally available resources.

* Provide technology options--not packaged solutions.

Promotion and Dissemination

* Promote adaptive, on-farm research.

* Encourage local innovation and experiments.

* Be extremely careful with external incentives.

* Promote local responsibility and a problem-solving orientation to development.

* Promote inter-farm tours and farmer exchanges.

* Use local "accelerators" as extensionists.

Credit

* Use an interest rate that covers fund management costs.

* Integrate local management and quickly phase in complete local management.

* Tie credit to use of sustainable practices.

* Conduct environmental and sustainability assessments before loan dispersal.

Training

* Teach principles and methods not precepts and formulas.

* Teach leadership skills.

* Teach organization management and simple accounting skills.

* Develop confidence in local technologies, innovations, and adaptations.

* Teach problem-solving methods.

Monitoring and Evaluation

* Monitor indicators of non-sustainability ("e.g.", low rates of participation and technology adoption, environmental degradation, local dependency on project.)

Table 11. Diffusing project benefits beyond project boundaries and examples of NGO program interventions

Technology Development

* Develop simple technologies easily adapted to different resources and constraints.

* Adapt technology to farmers resources and constraints.

Promotion and Dissemination

* Promote farmer exchanges and links between impact area and adjacent areas.

* Lead local farmers on periodic voyages to outside areas to reveal potential markets and opportunities.

Credit

Training
* Teach the critical nature of interdepen-dencies between regions.

* Teach the negative aspects of the "limited pie" attitude towards economic development.

Monitoring and Evaluation

* Monitor the number and character of inter-region links and exchanges between farmers and local institutions.
Table 12. Avoiding negative side-effects and examples of NGO

program interventions

Technology Development

* Analyze local and downstream impacts of new and existing technologies.

* Promote options that clients can use and adapt with various resource levels.

Promotion and Dissemination

* Promote interaction and class exchange and support for project activity.

* Promote collaboration within micro-watersheds to treat private and common lands.

Credit

* Avoid creating dependency on artificially low rates and favorable loan conditions that will not last beyond the project.

* Do not supply credit for activities that have adverse impacts.

Training

* Enable clients to recognize potential externalities; ("e.g.", dependency, downstream degradation, negative alteration of the agroecosystem, negative health effects due to pesticide misuse).

Monitoring and Evaluation

* Monitor the local capability to recognize and resolve negative side-effects; does this capability improve with training?

Exercise 3
Following group presentations and general analysis of the results, form a group for each project component ("i.e." technology development, promotion, credit, training, monitoring, and evaluation). Have these groups summarize all program recommendations made for that specific component during the previous exercises. This way, participants formulate the final, component-specific guidelines.

Session 10. Designing Strategies for Technology Development and Promotion. (Field Exercise, 3 hours)

Introduction

NGOs often have limited resources and immense jobs. How can they efficiently use their resources to get the maximum impact? Ideally, for example, an NGO could plant one seedling with the right method and species, in the right location, and with the right person, to start a chain of spontaneous replication. Visitors passing through the area five years later, would find these trees in the immediate area, across the next valley, and beyond the other side of the mountain as well. Though the stuff of dreams, this example illustrates how we should think of technology development and promotion.

Objective

* Learn a method for designing and promoting technologies that is participatory, repetitive, and develops local capabilities for innovation and experimentation.

* Enable participants to evaluate their own project's development and promotion methods and recommend improvements.

Approach

Separate participants into groups of about four and assign a beneficiary farm and family to each group. Based on what they learned during the previous field exercise (Session 6), have each group choose one problem area (in either the forestry, agroforestry or watershed management sectors) and design a technology development and promotion strategy. Near the end of the exercise, have each group discuss its strategy to achieve spontaneous replication when the project ends.

Lecture/Discussion Content

Farmers adopt innovations more rapidly if they fill a primary need, are simple, cheap, and provide assured, short-term benefits. Therefore, NGOs should design technologies to meet these criteria and promote strategies that publicize these characteristics. When developing and promoting new technology, consider the following suggestions:

* It is usually easier and often more effective to improve an indigenous practice than to introduce one. A logical rationale exists for the indigenous practice in the first place, and since the practice is already familiar, farmers see its adoption as a lower risk.

* Promote new or improved technologies in increments or give farmers the choice of adopting those techniques in increments. Similarly, design technology packages so that farmers can adopt them at their own pace and willingness. This method supports farmers' innovation and problem-solving capabilities. It permits

farmers to adapt technology to their specific site conditions and management objectives.

* Because of farmer diversity, it is better to provide different technology options rather than uniform solutions.

* Developing farmers' capabilities to experiment, innovate, link with external sources of ideas, and use new technology increases their ability to respond to future problems.

* Try to use traditional organizations (families, labor exchange groups, religious or community groups) as vehicles for technology development. These groups serve as the natural site for identifying problems, brainstorming for solutions, and risk-sharing for testing an innovation.

Session 11. What NGO Actions Are Necessary to Adopt the Recommendations? (Working Exercise, 3 hours)

Introduction

It is far easier for participants to develop guidelines than it is for them to carry them out. When participants return home, they will undoubtedly have a hard time convincing their project (or NGO) personnel to adopt the guidelines produced in Session 9.

Objective

* Identify internal constraints to NGO guideline adoption. Evaluate the constraints, and then propose means to reduce or remove them.

* Make recommendations that participants can follow at home.

Approach

Again divide participants into groups to identify and investigate organizational constraints. Have each group prepare a list of problems, explaining why each exists; then propose a method to ease the constraint. Groups should then present discussion results to all participants. Help participants analyze the problems and list ways to overcome them.

Lecture/Discussion Content

Project bureaucracy may have a subtle yet strong effect on project success or failure. Recent research shows that the image clients have of the project affects participation, technology adoption, and diffusion, and therefore, project success. For example, if clients detect undemocratic management within the project, will they adopt proposed democratic behaviors in their organizations?

The nature of the project certainly has a large effect on the its ability to achieve sustainable benefits. Obviously, projects must have proper development goals, and personnel must know the principles of sustainable development. Experience shows, however, that projects usually do not put this knowledge into practice. Then will participants be able put recommendations from this workshop into practice? What are the constraints or bottlenecks within projects that prevent participants from promoting sustainable activities. How can participants avoid, alter, or remove these bottlenecks?

Session 12. Workshop Conclusions and Evaluation. (Working Exercise, 2 hours)

Conclusions

Review and discuss the key workshop themes with participants. Discuss the lessons learned by participants during the workshop. This is also an opportunity to determine the workshop follow-up, if any, to answer who will do what, when, and where?

Evaluation

It's important to have both an open group and written evaluation of the workshop. The evaluation should ask how to improve the workshop, and which sessions were most helpful?

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