



SUSTAINABLE AGRICULTURE TRAINING OF TRAINERS

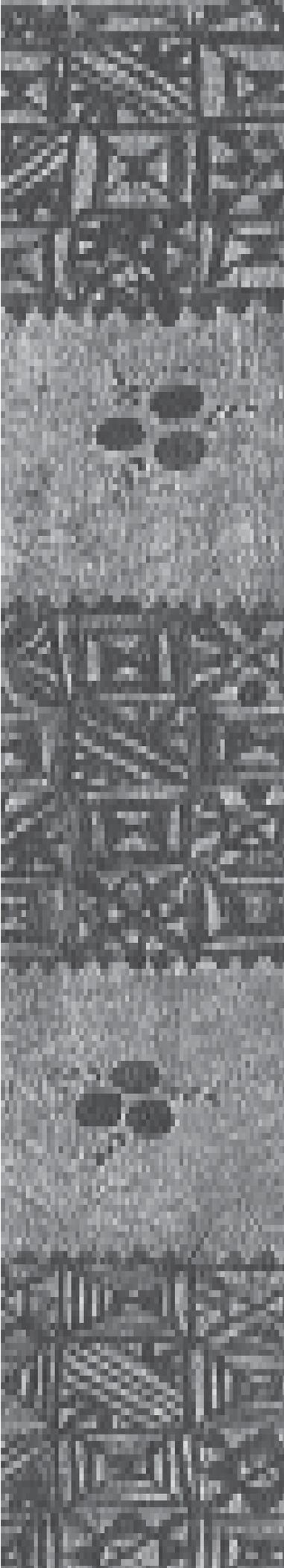
A Resourcebook

Sustainable Agriculture Training of Trainers

A resourcebook

SATOT





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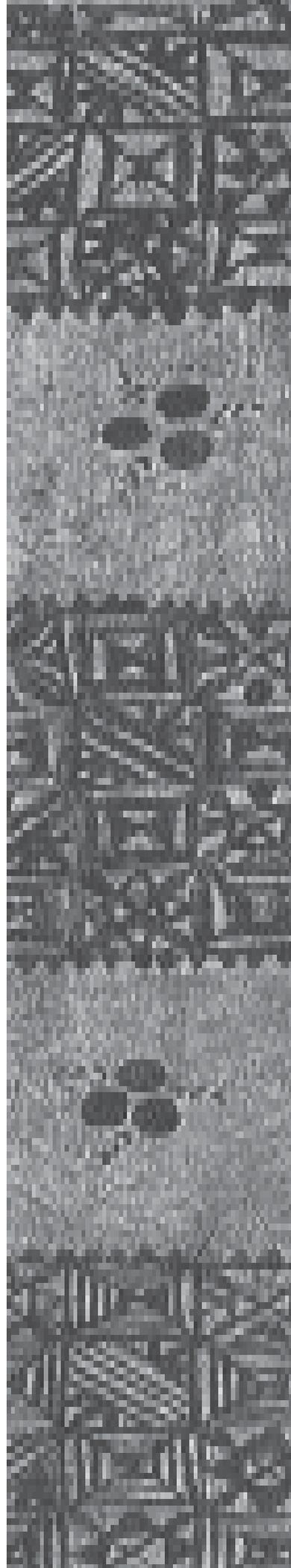
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Preface

The Sustainable Agriculture Training of Trainers Programme (SATTP) of the International Institute of Rural Reconstruction (IIRR) aimed to strengthen, upgrade and help systematize the efforts of lead trainers from developing country institutions in sustainable agriculture and to improve IIRR's human and institutional resource capacity to respond to the needs of trainers and educators in sustainable agriculture.

During the five years of SATTP implementation, a number of constraints and weaknesses were encountered both by IRR and its partners in their various training programs on sustainable agriculture. Some of these include, the lack of knowledge, the need to update relevant training materials, and inadequate training skills of trainers. Evaluation results show that SATTP contributed to the performance of the sustainable agriculture trainers and the quality of SA promotion activities in developing countries.

In this regard, the resource book of training materials is an excellent tool to spread the experiences gained with the project. It will help sustainable agriculture trainers in their conduct and formulation of their training programs. The resource book contains all the elements for establishing an effective SA training program, including basic training principles and concepts. Moreover, it includes comprehensive practical guidelines for the actual implementation of SA sessions and training programs.

I give credit to the SATTP Project Team for coming up with the resource book, with the assistance of Mr. Willem van Weperen, Sustainable Agriculture, Extension and Training Specialist of ETC Ecoculture of the the Netherlands.

I hope that this resource book will make a difference in the way future SA training programs will be developed and conducted.



John Willem Cools

First Secretary, Forests and Environment
Royal Netherlands Embassy

15 October 2002

Acknowledgement

This resource book is the result of a collaborative process.

We thank the key contributors to this resource book for their time and effort in revising and rewriting the session outlines and handouts: the SATTP project team, composed of Marissa Espineli, Nori Ignacio, Orly Buenviaje and Vicky Bautista, and the project advisor of ETC Ecoculture, Willem van Weperen. Thanks too to the SAToT participants, for their enthusiasm in providing feedback. Their reactions stimulated the training team very much to modify sessions and to try out new things.

Other trainers who developed session materials for this book are Thelma Laguilles, Liza Guliban and Danilo Guinto. We are grateful for their contributions.

Scott Killough, Director of the Regional Center for Asia, and various IIRR staff provided valuable comments on the draft. The core partner organizations of the SATTP project also provided comments and suggestions. Antonio Quizon of Asian NGO Coalition (ANGOC), gave substantial comments on topics/themes that should be given focus. We thank them for their efforts.

We owe much to Ronald Kayanja and Celso Amutan of the Publication and Communication Program of IIRR for their creativity, precious advise and the painstaking effort to transform the text into a readable publication.

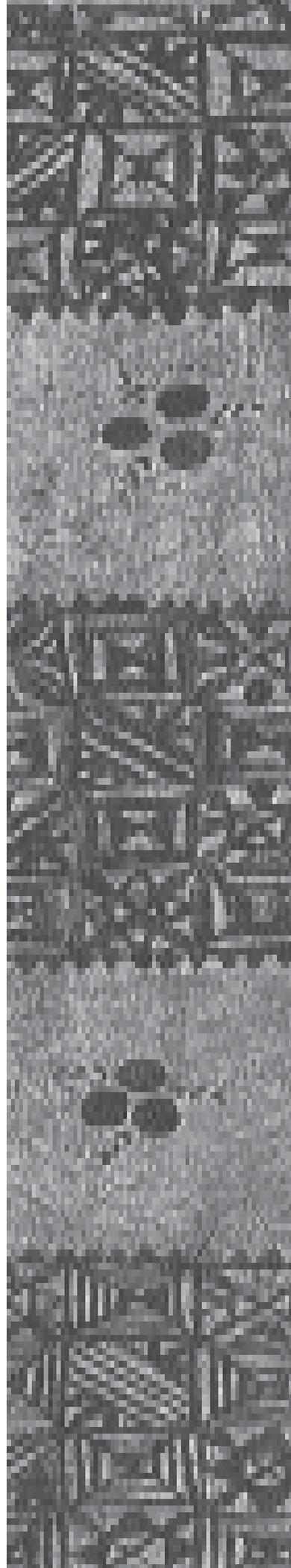
All these would not be possible without donor support from the Directorate General for International Cooperation (DGIS) of the Netherlands. The team at the Royal Netherlands Embassy in Manila was very supportive during the implementation of the project. We are grateful for their support and flexibility that allowed us to carry out necessary adjustments in the project. It is through this project, that IIRR was able to learn about capacity building, one of IIRR's best experiences so far.

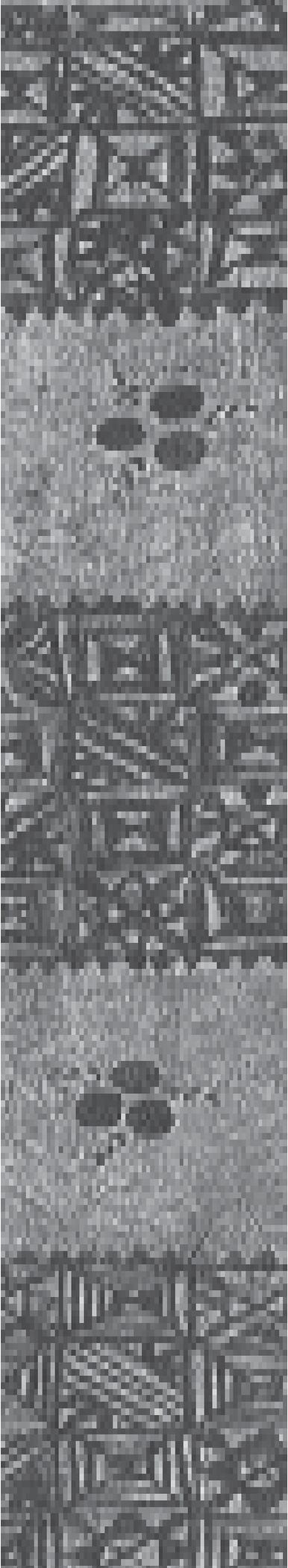
Users' guide

This resource book was designed for sustainable agriculture trainers who have had solid field experience on the practice of sustainable agriculture technologies and have been constantly challenged by the need to make their extension efforts through training more need based, participatory and systematic. They may be working with the government or NGOs as trainers, extension officers or agriculture project coordinators. The resource book will especially be useful for those who train others within the organizations that are involved in sustainable agriculture.

Each topic consists of the session guide and attachments in the form of hand-outs, guide questions, overhead transparency originals, posters and game descriptions. They appear in the set of materials following the order of use. There are six parts in each of the session guides:

- The duration is the proposed amount of time allocated for the session.
- The description introduces the particular attitudes, skills and knowledge focus of the session and why it is important to learn about them.
- The objectives portion lists the specific observable outcomes and behavior the learners will get out of each session.
- The learning aids and materials section lists the various materials that will help the trainers in achieving the objectives set in the most participatory way.
- The procedure describes the sets of events and activities necessary to ensure that learning occurs.
- The suggested reading materials list gives the titles of related books, documents and other publications that will be useful to enrich the learners' understanding of the topic.





Users' guide

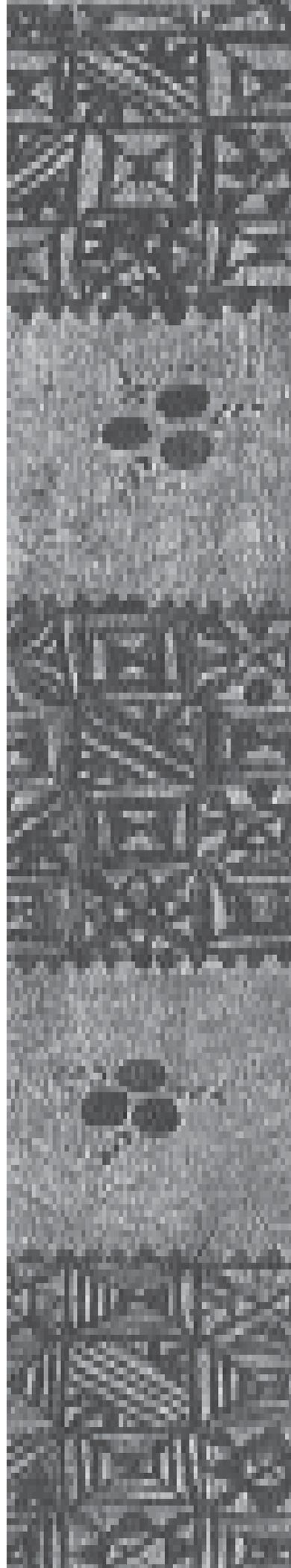
The session materials can be used alone or in combination with other materials. The idea is to use them with flexibility in mind. Time allocation may be adjusted but as users do that, they should be aware of adjustments in content coverage and use of methods. The activities within each topic are oriented towards maximum participation of learners. One can also use other participatory methods. It is important that users consciously build upon the experiences of the learners.

Users should feel free to use this resource book to suit their context, in a way suitable for their intended audience and the availability of learning materials cited in the session outline. Although the activities outlined have gone through adequate testing, there could still be room for improvements in the use of these materials.

Enjoy using this resource book. We challenge you to continue to be creative in using these materials.

Acronyms used

AME	Agriculture Man Ecology
ARLDF	Asian Rural Life Development Foundation
BARRA	Bangladesh Rural Reconstruction Association
BTO	Behavioral Training Objectives
CBO	Community-based organization
CDR	Complex, diverse and risk prone
CIAT	Centro Internacional de Agricultura Tropical
CPOs	Core partners organizations
CvSU	Cavite State University
CWA	Common work areas
CWDS	Community Welfare and Development Society
DGIS	Directorate General for International Cooperation (Netherlands Development Assistance)
FAO	Food and Agriculture Organization
FLE	Farmer-led extension
FP	Farmer promoter
GO	Government organization
GSS	Gami Seva Sevana Ltd.
IIED	International Institute for Environment and Development
IK	Indigenous knowledge
IIRR	International Institute of Rural Reconstruction
KSA	Knowledge, skills, attitude
LCD	Liquid crystal display
LEISA	Low External Input and Sustainable Agriculture
M&E	Monitoring and evaluation
NGO	Non-government organization
OHP	Overhead projector
OHT	Overhead transparency
PADEK	Partnership for Development in Kampuchea
PO	Peoples' organization
PPP	Powerpoint presentation



PRA	Participatory rural appraisal
PTD	Participatory technology development
R&D	Research and development
RRAFA	Rural Reconstruction Alumni and Friends Association
SA	Sustainable agriculture
SAF	Sustainable agriculture forum
SARRA	South Asia Rural Reconstruction Association
SAToT	Sustainable Agriculture Training of Trainers
SATTP	Sustainable Agriculture Training of Trainers Program
SMS	Subject matter specialist
T&V	Training and visit
TNA	Training needs assessment
ToT	Transfer of technology
UNDP	United Nations Development Programme
VMV	Vision, mission, values
VSO	Voluntary Service Overseas
W/M/C	Women/men/children

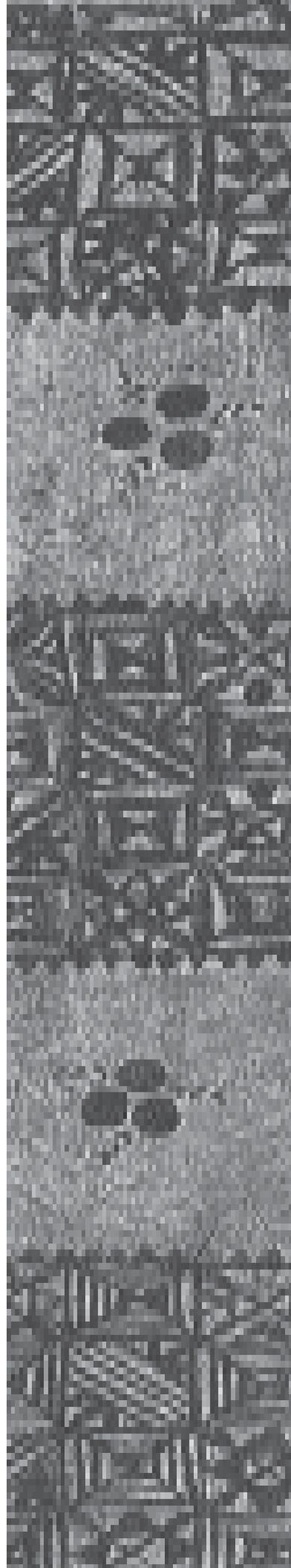
Overview

This publication is a product of the Sustainable Agriculture Training of Trainers' Project (SATTP), a 5-year project of IIRR funded by the Directorate General for International Cooperation, Netherlands Development Assistance (DGIS). The project was a response to the need of sustainable agriculture (SA) training institutions to do a better job at imparting and sharing the sustainable agriculture concepts and principles and their experiences with practical technologies. Thus, a focus on how to do SA training more systematically, more participative and with an emphasis on deepening the understanding of the principles behind SA.

This resource book is an outcome of the 5-year experience of organizing the Sustainable Agriculture Training of Trainers Course. It has gone through a thorough review process that required the SATTP team to critique on the session guides, hand-outs and accompanying visual aid attachments. This was done based on the experience of the authors in using them, the responses of the various learners that have attended the SAToT and comments from other technical staff of IIRR and the CPOs.

The resource book is divided into two main parts. Part 1 focuses on the various elements trainers should consider in designing, organizing, implementing and evaluating a sustainable agriculture training program. It begins with a full understanding of the concepts and principles of sustainable agriculture, gender equality and fairness, principles of adult learning, building upon indigenous knowledge and putting training in the context of participatory technology development and farmer-led extension approach. Since the course puts premium on the experience of the participants, a session on sharing their current issues and efforts in SA training is a must.

Part 2 places emphasis on the major tasks in training program development and management. There are four main tasks covered: training needs assessment, designing SA training programs, training program implementation and monitoring and evaluation of SA training programs.



Part one

Considerations in sustainable agriculture training



● Sustainable agriculture principles

● Issues and training efforts in sustainable agriculture

● Creating an effective learning environment for adults

● Gender in sustainable agriculture training

● Participatory technology development

● Approaches to farmer-led extension

Sustainable agriculture principles



Duration

3 hours

Description

Promotion of sustainable agriculture (SA) takes place worldwide. Understanding SA varies with the locality where it is used, hence, assessment of agricultural production systems often differs. It is important to know the different dimensions of SA and the principles underlying its concept. Having a common understanding of these principles would be helpful for SA trainers in conveying the message of SA.



Objectives

At the end of the session, the participants should be able to:

- explain the concepts of SA and its main characteristics; and
- apply the concepts in developing agricultural activities.

Learning aids and materials

- OHT: "Features/attributes/dimensions of SA"
- Metacards
- Materials for the Nut Game (see Attachment 2)



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■ Procedure

Activity 1: Brainstorming on SA concepts [30 minutes]

1. Ask the participants to write their own definition of SA on the distributed metacards.
2. Put the cards on the pin board and group them with the help of the participants.
3. Together with participants, label each group; the dimensions of SA appear.

Activity 2: Interactive lecture on SA dimensions [1 hour]

4. Discuss the dimensions of SA. For each segment of the discussion, refer to the outputs in the metacards. Ask the participants about their experiences on how they apply SA principles in their agricultural program to “ground” the principles.
5. Using the OHT presentation (see Attachment 1), summarize the discussion highlighting the basic concepts, principles and characteristics of SA.

Activity 3: Discussion on SA linking with food security [30 minutes]

6. Relate SA with the real concerns and constraints of resource-poor farmers highlighting the rural poverty context. Focus the discussion on the importance, values and impacts of SA to food security.

Discussion outline may include:

- Overview of global food security issues particularly those affecting resource-poor farming households. (Issues can be contextualized based on the geographical focus of the training, e.g. local, national or regional, i.e. Asia, Africa, Latin America).



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- Context of the resource-poor farmers, e.g. limited assets and access to agricultural inputs, aversion to risk, vulnerability, land and power relations, etc.).
- Regenerating the agricultural resource base.
- The need for a bias toward small-holder agriculture.

Activity 4: Nut game [50 minutes]

7. Introduce "The Nut Game" as described in Attachment 2.

Session wrap-up [10 minutes]

8. Wrap up the session by summarizing the major learning points, then lead the discussion to the next session. [10 minutes]



Suggested reading materials



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Sustainable agriculture principles¹



Introduction

It is expected that the world population will grow by an unprecedented 90 million people a year in the next quarter century (IFPRI, 1995). Yet, capacity of available resources and technologies to satisfy the demand for food and other agricultural commodities remains uncertain. Agriculture has to meet this challenge by increasing production on lands already in use and by avoiding further encroachment on lands that are only marginally suitable for cultivation.



Agricultural land use inevitably changes the ecological system. When farmers apply modern production methods, they interfere with natural mechanisms by using external inputs such as mineral fertilizers and insecticides to achieve short and medium-term profit maximization. These efforts are backed by agricultural research which examines the productivity of single production factors such as nitrogen or water for individual cultures.

This linear mindset disregards the interconnectedness and multiple functions of the "farm" ecosystem's individual elements. By ignoring this fact, enormous increases in yield are indeed possible in some cases, but at the expense of the system's stability and its self-regulating mechanism.

The exploitation of limited natural resources also contributes to the destruction of ecological systems. They are mostly only used on a short-term basis and are then lost from the system forever.

Ecological farming methods are crucial in developing countries which are both indebted and have low foreign exchange earnings. These countries need farming methods that would allow a high degree of self-reliance and decentralization on a national and regional scale as well as on the level of individual farms.

¹ Compiled by Dr. Tabrez Nasar, Program Officer-Agriculture and Natural Resources Management, IIRR.



Sustainable agriculture principles

■ What is sustainable agriculture or SA?²

Sustainable agriculture may be defined as any practice, method, technique/technology, philosophy or system of production that makes agriculture economically feasible, ecologically sound, socially just and humane (equitable), culturally appropriate and grounded on holistic science.

The various concepts used in the definition need to be explored for a better understanding.

Ecological soundness. Derived from the Greek word for house, "eco" implies the wisdom and authority to manage in the best interests of the household. Biological diversity is essential to achieve self-regulation and stability. An ecologically-sound agriculture must focus on the maintenance and enhancement of the natural resource base. It should be resource efficient to conserve precious resources and avoid systems toxicity.

Economic viability. It is essential to have a positive net return or at least a balance in terms of resources expended and returned. At the very minimum, the system should provide the food and other basic needs of the farming household. In accounting the economic viability of agriculture, numerous subsidies that make conventional agriculture appear economically viable must be examined, including the hidden costs of externalities such as loss of wildlife, increased soil acidity and health care costs from chemical exposure.

Social justice and equity. A socially just agricultural system must address inequities in the world. The system must assure that resources and power are distributed equitably so that basic needs are met and human rights are assured. Equitable access to information, market and other farm related resources especially land, should be provided to all irrespective of sex, social standing, religion or ethnicity.

² This portion is adapted from a paper presented by Dr. Oscar Zamora at the International Course on Sustainable Agriculture Training of Trainers, June 21-July 16, 1999, IIRR, Silang, Cavite, Philippines.

Sustainable agriculture principles



In many developing countries, access to land is very important as it allows the population to escape poverty and grow the food it requires. Along with equitable land tenure, availability of adequate resources such as capital, information, technical assistance and market opportunities are also important. The rights of landless farm workers and the urban poor must also be recognized. This requires fair wages, a safe work environment, proper living conditions and the right to nutritious and healthy food. In all aspects of the whole production system, people must be able to participate in making vital decisions that affect their lives.

Culturally appropriate. Agriculture must embody our highest respect for the enhancement and protection of diverse cultures. Culturally appropriate agricultural systems must give due consideration to cultural values, including religious beliefs and traditions in developing agricultural systems, plans and programs. Cultural roots are as important to agriculture as plant roots. It is equally important that the highest values apply to human interactions, since without strong communities and vibrant cultures, agriculture will not flourish.

Grounded on holistic science. Agriculture based on holistic science, as against reductionist (conventional western science), gives importance to the interrelatedness of the social, economic, environmental, cultural and political aspects as much as to the biophysical aspects of agriculture. It also considers the dynamic interactions among on-farm, off-farm, non-farm and farm related activities, recognizing that these activities complement each other.

Goals of sustainable agriculture

The goals of developing sustainable farming methods are:

- long-term preservation or improvement of soil fertility while maintaining the stability of the system by shaping an almost natural ecosystem and
- securing and improving nutrition in a largely autonomous system and achieving production surplus to meet other needs.



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■ According to Pretty (1996), sustainable agriculture is any production system that systematically pursues the following goals:

1. A thorough incorporation of natural processes such as nutrient cycling, nitrogen fixation and pest-predator relationship (rather than pesticides) for pest management. For nutrient management, this involves recycling of nutrients, use of compost, green manure and other forms of organic fertilizers.
2. Minimize/eliminate the use of external and non-renewable inputs such as pesticides and synthetic, highly soluble fertilizers that damage the environment and pose risks to farmers' and consumers' health.
3. Practice alternative crop and livestock breeding and selection. Appropriate and highly adapted plant varieties and animal breeds will be conserved, multiplied and utilized.
4. Practice diversified and integrated farming system with special focus on functional diversity in the farm.
5. Full participation of farmers and local, indigenous peoples in all processes of problem analysis, technology development, adaptation and extension.
6. A more equitable access to productive resources and opportunities.
7. A greater productive use of local knowledge, practices and resources.
8. The incorporation of diversity of natural resources and enterprises within the farm.
9. Increased self-reliance among farmers, local and indigenous communities.
10. Recognition of the role of women in development processes.

Characteristics of sustainable agriculture

SA is flexible. It does not prescribe defined set of practices, methods, techniques/technologies or policies that would restrict the options of farmers. It also recognizes location specificity.

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SA is experiential. It is a learning process and does not impose a simple model or package. As conditions and knowledge change, farmers and local communities must be able to adapt and allowed to change.



SA defies simple definitions. "The best way to communicate the meaning of SA is through real-life stories of farmers who developed sustainable farming systems on their own farms".

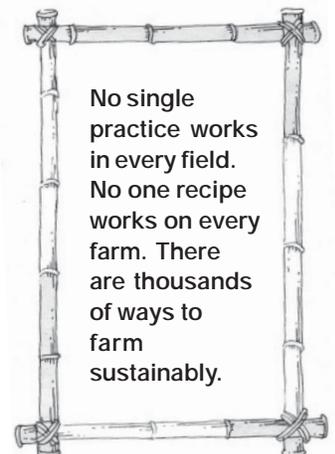
SA is participatory. It views farmers as active participants, rather than passive targets, beneficiaries, end-users or clients, in the learning process, planning, implementation and monitoring and evaluation of development projects. Informal innovations by farmers/partners are viewed not as haphazard unscientific processes but are results of systematic observation, experimentation and adaptation. It incorporates recent innovations originating from scientists, farmers, or both. It also relies heavily on the continuous innovation by farmers and local communities.

SA is proactive. It is forward looking. Its concern is not only for short-term benefits but also for long-term sustainability. It is also dynamic and innovative.

Myths and the myth makers of SA

It is important to look first at the myth makers. They have different camps; those concerned with the food system, from 'reductionist' researchers and scientists, from farmers to consumers, from activists to companies, from citizens to policy makers. These are important as they shape the way people think about the problem, and what we might want to do about it.

One camp says we can feed the world, but that it will have to be the industrialized countries that should come to the rescue by greatly increasing their farm production. Others say that exporting fertilizers and





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pesticides to developing countries will help increase production while others advocate genetic modification of plants and animals as the greatest single technology that will feed the world. There is a group of advocates, however, that contends that SA is a viable alternative for all farmers, whether in developing or developed countries, as it has the potential to greatly improve productivity on existing lands.

None of these may seem contentious. One way of looking at it is that each has its place, and can make a contribution. However, some proponents of high-yield agriculture present this approach in overly simplistic, "either-or" terms. They suggest, for example, that we must rely entirely on pesticides, commercial fertilizers, chemically-based inputs and high energy use in land intensive crop production systems or face the prospect of low yields per unit area. Hence, this would require an expansion of agricultural production into marginal land areas or create a new world food crisis.

What do myth makers say to support this claim?

At the beginning of the 1990s, then US Secretary of Agriculture, Earl Butz, said we could move to more sustainable farming, but "before we move in that direction, someone must decide which 50 million of our people will starve. We simply cannot feed, even at subsistence levels, our 250 million Americans without a large production input of chemicals, antibiotics and growth hormones".

An investigation sponsored by the Royal Agricultural Society of England, chaired by Sir Derek Barber in 1991, the "Barber report", concluded that any "criticism of modern farming is unsubstantiated and much public concern is misconceived. The image of a simple 'green' agriculture with a contrived non-intensive output is incompatible with the aim of maintaining a competitive position in the marketplace".

The myth is well supported by Dennis Avery and colleagues from the Hudson Institute in Indianapolis. The 1995 book *Saving the Planet with Pesticides and Plastic* and subsequent publications, seek to distinguish 'high-yield' and 'low-yield' agriculture. Their narrative states that high-yield agriculture is good as it takes the pressure off wildernesses and wildlife; it is good as it can feed the world; it is good because evidence for any

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negative impacts on the environment is greatly exaggerated. High-yield agriculture can only be delivered with high levels of 'pesticides, fertilizers and plastic'. Low-yield agriculture, by contrast, involves too little input and so is a threat to world food security.

In another (in)famous publication known as the "Knutson report (1990)", the consequences of two potential agricultural policies in the USA, a banning of all pesticides and a banning of all fertilizers and pesticides were investigated. More than 140 agricultural scientists provided estimates of how such cuts would affect yields and costs. The authors concluded that a no chemical policy approach would lead to sharply lower yields – down 35-50% coupled with higher crop prices, higher erosion, and higher inflation in the national economy. Food price inflation was highlighted: food price inflation arising from no chemical use would exceed 10% annually and approach the 14-15% level that existed during the world food crisis of 1973-74.

The arguments and the myths they nurture, hold up only under a highly questionable underlying assumption – that yields under SA production system will be low and will not be able to feed the increasing world population:

- a) due to the low or even no external inputs applied;
- b) because it is primitive, low technology, 'backward' or 'traditional'; and hence,
- c) unscientific.

This section presents some documented evidence which challenges wrong assumptions about SA, refutes the myths that would undermine its acceptance.

Myth no.1: SA will result to low yields and cannot meet increasing global food needs of the future.

This is untrue. There is considerable evidence showing that farmers using sustainable practices can have a production yield at least as high as, and sometimes higher than, they did as conventional producers or in comparison with their neighbors using conventional agriculture.



Sustainable agriculture principles

■ At the International Institute for Environment and Development (IIED), a study assessed the extent and impact of the potential of SA on food production in 20 countries (Pretty, 1996). The study involved 63 agricultural projects and initiatives with 1.82 million households farming, 4.1 million hectares using SA technologies and practices. The study shows that in all projects:

- a) resource conserving technologies in conjunction with group or collective approaches to agricultural improvement were used;
- b) participatory approaches and community-based activities were at the center of the initiative; and
- c) no dole out/give-away was provided to illicit the participation of the local people.

Agricultural productivity per unit area increased by 140-300%, sometimes substantially by as much as 250, 288 and 300%, respectively in the case of rainfed-sorghum/millet cropping in Burkina Faso, India and Senegal. The greatest increases, averaging 200% following conversion to SA, occurred in rainfed agriculture in low yielding countries.

Smaller, but still substantial increases were recorded in irrigated areas of Southeast and South Asia, where the green revolution for rice was started. Yield increases under this condition were 10 percent better than modern/conventional pre-sustainable agriculture.

Myth no.2: SA represents a return to primitive, low technology, 'backward' or 'traditional' agricultural practices.

This is untrue. SA presents a positive response to the limits and problems of both traditional and modern agriculture. It does not return to the past nor idolize the new. Rather, it takes the best aspects of both traditional wisdom and the latest scientific advances. It incorporates recent innovations originating from scientists or farmers, or both. Some are very high technology, some are practices proven over thousands of years. This results in an integrated, nature-based agro-ecosystems designed to be self-reliant, resource conserving and productive, both in the short-and long-terms.

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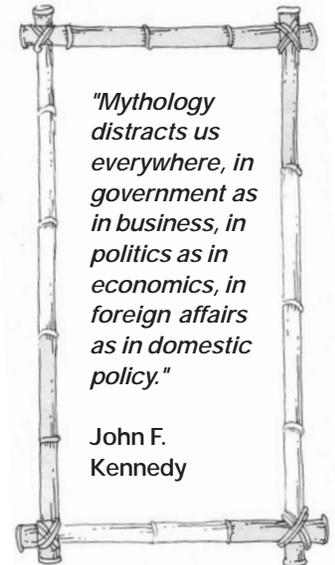


Myth no.3: SA is unscientific

This is unfounded. Closer analysis shows that the scientific method is used extensively in SA. SA in fact is a highly sophisticated set of production systems using many state-of-the-art technologies. It differs from conventional science because it is holistic rather than reductionist (i.e., process of dividing scientific problems into discrete, manageable pieces). It is now widely recognized that, for total development effort, there is a need to use the systems approach and understand the complex interaction among the biophysical, social, economic, cultural and even the political elements of the system.

In SA, the wealth of wisdom acquired by farmers are recognized, and farmers are considered as active partners in the development process. The farmers' propagation of the unscientific "sustainable agriculture" myth stemmed partly from the 'intellectual arrogance' of some members of the scientific community. Some of them tend to avoid 'unscientific points' especially if they come from 'layman' farmers.

Blindly accepting the myths in light of the evidence against its validity, can preclude investment in R&D on environmentally-friendly alternatives to chemically-based production systems, distract decision makers at various levels to promote and implement sustainable production systems, and discourage agricultural businesses from making strategic decisions about products and services likely to be demanded by future farmers. Ultimately, the myths could impede progress to achieve an agricultural system that will feed a growing world population without endangering the natural environment. It may, therefore, prevent us from taking effective action.





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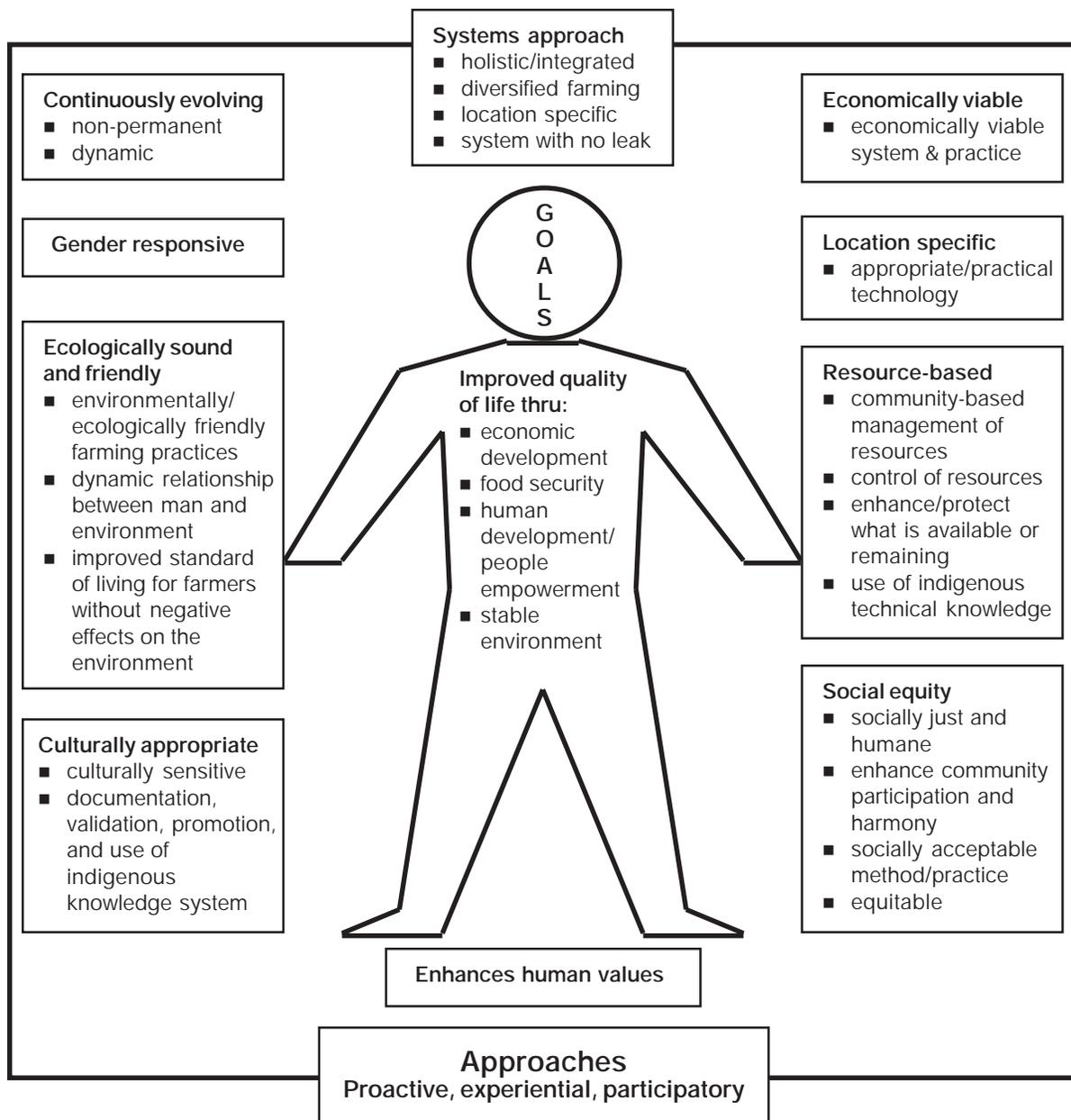
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Attachment 1

OHT

Features/attributes/dimensions of SA



Source: SEAMEO Regional Center for Graduate Study and Research in Agriculture (SEARCA). 1996. Working paper on SA indicators.

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Attachment 2

“The Nut Game” Experiencing Sustainability



Objectives

- To allow participants experience the concept of sustainability.

Setting/approach

- Repeated activity of a small group of participants in a plenary session, while other participants observe.

Materials

- Poster with goal and rules of the game, recording forms (see format given below), an open bowl (about 30 cm diameter) and about 140 nuts, pebbles or seeds of 1-2 cm diameter.

Procedure

- Allow a small group of people (4-5) to sit around an open bowl containing 25 nuts. Introduce the exercise by unveiling the written goal and rules of the game, which are read by the participants in silence. Give the signal to start the game. When the game is completed, record the total harvest per person and the group total. **[10 minutes]**

Sustainable agriculture principles



Attachment 2 . . . continued

The Nut Game

Goal

- Each player's goal is to get as many nuts as possible during the game.

Rules

- Upon the facilitator's signal, the players take out nuts from the bowl – all at the same time, but using only one hand. This makes one "round".
- The balance left in the bowl is doubled after each round by the facilitator up to the maximum of 25 nuts.
- The game is over when the bowl is empty, or after 10 rounds

- After one group has finished the game, invite 4-5 new persons to play it. This can be repeated three times or more. **[20 minutes]**
- After the games, discuss the two questions in the plenary.
 - How did you feel during the game?
 - What did you learn during the game?



Sustainable agriculture principles

Attachment 2 . . . continued

Important items for discussion are cooperation, self-restraint, trust, the regenerative capacity of natural resources, depletion, total harvest and equity in division of the harvest. [20 minutes]

Source: L. Van Veldhuizen, A. Waters-Bayer and H. de Zeeuw. 1997. Developing technology with farmers: A trainer's guide for participatory learning. Zed Books Ltd., London and New York.



Note:

The first game usually ends after a few seconds because, when the starting signal is given, all the participants simultaneously grab all the nuts they can get. Thus, they empty the bowl and no refilling takes place. The second and third games usually take a bit longer and are played for several rounds. In case this does not happen, the facilitator must stimulate a brief discussion about similarities between the game and real-life situations, directing the discussion towards such concepts as sustainability, non-exploitative use of resources and Nature's regenerative capacity. After this intermission, a new group of players should be able to play the game for several rounds, thus achieving a higher total score per player and as a group.

Reporting Format

	Game 1	Game 2	Game 3	Game 4
Player 1				
Player 2				
Player 3				
Player 4				
Player 5				
Total				
Minimum/ Maximum				
Average				



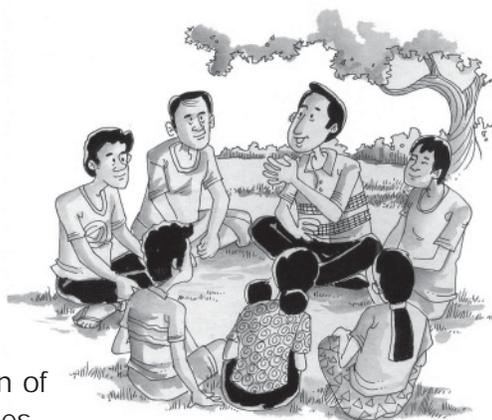
Issues and training efforts in SA

Duration

3 hours

Description

As the need for pro-active promotion of Sustainable Agriculture (SA) becomes more recognizable, capacity building of communities, organizations and development workers also becomes more imperative.



But many extension workers face constraints in training others in SA. What resources are available to extension workers for them to train farmers and other extension workers on the complexities of SA? What support would be available to them in promoting and helping others learn and internalize sustainable agriculture as a way of life?

Through sharing by participants on their experiences in SA programs and training, they will have the opportunity to identify resources for SA training.

Objectives

At the end of this session, the participants should be able to:

- identify the different opportunities and resources available for SA training from the different work areas represented during the course; and
- identify the challenges faced by SA trainers.

Learning aids and materials

- Instruction sheet for the workshop
- Newsprints, permanent markers and board markers, masking tape
- Colored meta cards



Issues and training efforts in SA

■ Procedure

Activity 1: Introduction [10 minutes]

- Briefly describe the activity and introduce its learning objectives. Inform participants of the interrelated levels of the workshop to be accomplished in sequential order.

Activity 2: Workshop [1 hour and 10 minutes] (see Attachment 1 for detailed instructions)

- 1st Level: Individual/Organization

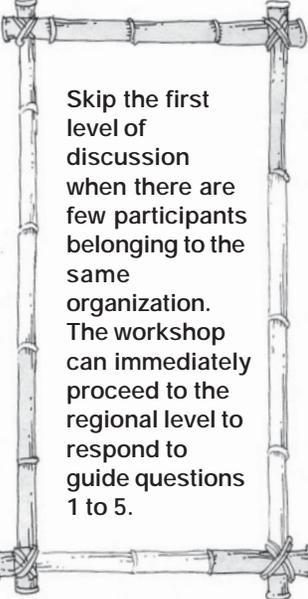
The participants belonging to the same organization come together to respond to guide questions 1 and 2.

- 2nd Level: Per region

Group the participants according to geographical areas represented in the course. Using prepared matrices, participants from each organization will share and collate their responses to questions 1-5. Then, each group make a summary by identifying the similarities and differences across organizations and work areas.

- Reporting

Each group presents its outputs 1-3. After the presentations, open the floor for clarifications/comments. Take notes useful for wrap-up.

A rectangular frame made of bamboo poles, tied together at the corners with small wooden pegs. The frame is empty, serving as a container for text.

Skip the first level of discussion when there are few participants belonging to the same organization. The workshop can immediately proceed to the regional level to respond to guide questions 1 to 5.

Issues and training efforts in SA



Activity 3: Wrap-up [30 minutes]

- Place on the board all the groups' outputs together. Do the same for outputs 2 and 3.
- Draw from the participants what they see as commonalities from outputs 1 to 3 in terms of the following:
 - the opportunities and resources available for SA training: the types of network of SA organizations (from within and outside the group of participants), the type of their involvement (participants, focus, duration), training materials available and sources); and
 - the challenges faced by trainers of SA.
- Summarize the ideas from the participants. If necessary, add the list of challenges based on the session handout.



Issues and training efforts in SA

Some challenges to sustainable agriculture training

For more than a decade now, most SA efforts have focused on the development and dissemination of technologies to farmers. In recent years, however, new challenges have arisen in promoting SA as an important development strategy. Training has been recognized as an important tool to support this strategy. Many SA trainers are practitioners who are willing to share their knowledge on the practice of SA but, many of them may not be effective trainers. Few institutions offer training courses on how to train for SA. In IIRR's more than a decade of experience in developing and managing SA training courses, a number of challenges in ensuring more effective SA training programs remain.



1. SA implies new thinking about teaching/training and learning

It offers new ways of learning about the world, new ways of solving survival problems and a new approach to extension. Professionals working on the complexity, diversity and uncertainty of SA need to engage in sensitive learning about the particular condition of rapid change. What is true now, may no longer be true after a year, a month or a day. Trainers now realize the need to focus on how people learn what they should be learning when they undergo a SA training, instead of focusing on content alone.

2. Documentation of SA practices and results

There are a lot of SA practitioners but only a few documented practices which can be used as tools for learning more about SA. The participants of the Sustainable Agriculture Training of Trainers (SAToT) Conference organized by IIRR in November 1995 expressed this limitation.



Issues and training efforts in SA

3. Paradigm shift on how we view farmers and farming systems

"Peasants do not lack brains only opportunities," stated Dr. Y.C. James Yen, founder of IIRR. If we view farmers as lacking in knowledge we tend to train them by providing them with lots of information. If we believe that they have inherent knowledge out of their lifelong experience, then, we have to challenge ourselves as trainers to facilitate the knowledge development process. It is also important to continuously observe and get feedback from farmers to enhance their decision-making capacity and group learning.

Belief in farmers' knowledge affirms their role in agricultural research and extension. They are important actors in the development of the agricultural sector. As farmers develop their expertise, they become more capable of making demands on research and extension systems.

Agricultural systems vary. Technologies applicable to a given farming system may not be applicable to another. However, it is important to recognize that these systems are related to one another, thus, the need for a holistic view of agriculture in developing SA training courses. Training designs should consider the differences among the various ecological systems.

Farmers include women. A larger percentage of farmers are women, however, many training courses in SA are attended mostly by men. Often, organization and administration of these courses alienate women's participation. One story was told of a woman who attended a meeting on a new project on dairy cows. Being the only woman, she raised the concern that since the cows will be zero-grazed, it will mean that women will do most of the work for the cows. This, she pointed out, calls for the presence of women during meetings and in any training related to the project. The woman had a point and was fortunately recognized by the project organizer, but how many projects failed because women were not involved (Aaker, 1994). How much resources have been wasted because training courses were attended by men and not by women who need them?





Issues and training efforts in SA

4. Trainer skills and attitudes

Sensitivity to learners' needs has always been a challenge. Communication skills are important for a trainer. Look for opportunities and more creative ways of helping your learners learn. Build on their existing experiences. Help them articulate time-tested practices and indigenous knowledge. Social events too may offer opportunities for learning. Take advantage of these occasions.

5. Rethinking our own values as SA trainers

SA becomes a way of life in itself. Sensitivity to environmental preservation is translated to a less wasteful lifestyle.

Being an SA trainer calls for consistency of our actions with key values serving as foundations of SA.

6. Maximizing resources for SA

Consolidating efforts by developing partnerships among practitioners and training institutions is becoming the norm. However, improvements can still be achieved to avoid reinventing existing efforts. A more systematic look at documenting lessons in using existing training course designs, experiences, materials and resources would be in order.

Reference

Aaker, Jerry. 1994. *Livestock for a Small Earth*. Heifer Project International, Seven Locks Press, Washington D.C.

Issues and training efforts in SA



Attachment 1

Instruction Sheet for the Workshop



Guide questions:

1. What sustainable agriculture (SA) projects is your organization engaged in?
2. How is your organization involved in SA training? Identify your audience, the training content/focus and duration.
3. What other organizations in your work areas are engaged in SA?
4. List training materials, training and educational opportunities and resource institutions available in your work areas to improve capabilities towards SA.
5. What are the challenges faced by training courses and other educational opportunities for SA in your work areas?

At the regional level, each group prepares a report using the following matrices.¹

Output 1. Regional group: _____

ITEMS		Org. 1	Org. 2	Org. 3	Org. 4	Summary
Name of organizations						
1. SA Projects						
2. SA Training	Participants					
	Focus					
	Duration					

¹ The number of columns for output 1 is based on the number of organizations represented in each of the regional groups.



Issues and training efforts in SA

Attachment 1 *continued.* . .

Output 2². Regional group: _____

ITEMS		CWA 1	CWA 2	CWA 3	CWA 4	Summary
List of other organizations per common work area	Engaged in SA					
	Engaged in SA Training					
Training materials	Title					
	Source					

Output 3. Regional group: _____

ITEMS	CWA 1	CWA 2	CWA 3	CWA 4	Summary
Challenges					

² For outputs 2 and 3, the number of columns is based on the number of common work areas (CWA) of each organizations.



Creating an effective learning environment for adults

Duration

3 hours and 30 minutes

Description

Most people think of learning largely in the context of education in a formal school setting. Accordingly, a lot of community workers “teach” villagers in the traditional “teacher-student mode”. In development work, we deal mostly with adults who learn differently from children. To have a more meaningful learning (and development) process, we need to understand how adults learn and what conditions are important for adult learning to take place.



Objectives

At the end of the session, the participants should be able to:

- enumerate the main characteristics of adult learning;
- distinguish the differences between adult learning and child learning;
- identify the principles of adult learning;
- explain how they will specifically apply adult learning principles in their own SA training; and
- explain why adults have different training needs, based on Kolb’s experiential learning cycle.

Learning aids and materials

- OHT: “Learning Occurs Best”, “Importance of Visualizing and Self-discovery in Adult Learning”, “Diagram of Experiential Learning Cycle”
- Instruction sheets for individual and group work
- Permanent markers, newspapers



Creating an effective learning environment for adults

Alternative activities

- Role play of two contrasting situations illustrating how a community worker might handle a learning situation in the village.
- Group work to compare the difference between how children and adults learn.

Alternative

- Instead of giving individual instruction sheets to the participants, the instructions may also be written on a big sheet of paper or directly on the board.

Procedure

Activity 1: Interactive lecture on adult and learning [10 minutes]

- Start the session by coming up with a common understanding about the meaning of the words **adult** and **learning** (see Attachment 1: Guide questions: "Adult and Learning").

Explain that in the context of community development work, we are dealing mostly with adults, thus, the importance of understanding how adults learn.

Activity 2: Individual and group work on child learning and adult learning [1 hour 20 minutes]

- Ask the participants to reflect on the important things in life they have learned (outside of the formal school context) and how they learned it. This will help them analyze how adults learn, and what conditions are important for adult learning. Give each participant a copy of Instruction Sheet A (see Attachment 2) and ask them to complete it individually.
- Ask the participants to share the important points about their learning in small groups of 3s or 4s.
- Invite several participants to share their learning experience to the big group. Write the main points about their responses in a table written on the board (see Attachment 3 for the table). Process their responses by asking questions (see Attachment 3).
- Give a summary of the basic differences between child learning and adult learning (see in the handout the basic differences). This is to underscore the importance of creating the ideal learning situation for adults for optimum learning.
- Summarize the points made by the group, with emphasis on the basic principles that underlie adult learning and some assumptions about how adults learn best (see Attachments 4 and 5).



Creating an effective learning environment for adults

Activity 3: Group work on application of adult learning principles and assumptions [1 hour and 40 minutes]

- Ask the participants to form three groups and provide each group with a copy of Instruction Sheet B (see Attachment 6).
- In the plenary session, representatives of each group will present their work. Encourage other participants to make comments and ask questions after each presentation.
- Allow time for comments and questions from the participants.
- Explain experiential learning cycle (see Attachment 7).

Activity 4: Discussion on learning styles [20 minutes]

- Discuss the implications of having participants with different learning styles in the same course and how this issue can be addressed.
- Wrap-up the session with a reflective sharing of the maxim on “teaching” from Khalil Gibran on (see Attachment 8).

Suggested reading materials



A Manual for Participatory Training Methodology in Development. 1987. Society for Participatory Research in Asia, New Delhi.

IIRR. February 1997. Introduction to Non-Formal/Adult Education. A handout prepared by Ilya Moeliono for the International Course in Development Communication.

Renner Peter F. 1989. The Instructor's Survival Kit. Second Edition. Training Associates Limited, Vancouver, Canada.

UNICEF. 1995. Workshop on Strengthening Participatory Attitudes in Communication and Development: Facilitator's Manual (Trial Edition).

Creating an effective learning environment for adults



Introduction

Learning is a life-long process. Contrary to the common belief that learning is the sole preserve of younger people, adults do continue to learn, to grow, to change. Nobody is too old to learn.

Who qualifies as an “adult”?

- A person who is responsible for his/her own life, who is self- directing.
- One who is physically mature (biological).
- One who is at least 15/18/21 years old (legal, as stipulated by law).
- One who performs adult roles such as being a parent, livelihood earner, head of household, etc. (social).

Learning is the process of acquiring some new knowledge, skills, or attitudes..



Principles of adult learning

Below are basic principles of adult learning, some assumptions about how adults learn best, and their implications to creating an environment for effective learning.

1. **Adults are interested in and learn quickly about things that are relevant to their lives.**

The content of the learning process should respond to the participants' actual needs (and interests). It should focus on solutions to issues they face in their daily lives. To ensure that learning will be relevant, it is important that learners participate in diagnosing their learning needs. The learner should also set learning goals, determine the process in which they wish to learn, and assess their progress.



Creating an effective learning environment for adults

■ **2. Adults have gained a wealth of knowledge and experience which should be used in the learning process.**

The trainer's main responsibility is to draw out the participants' reservoir of knowledge and experience in order to enrich the learning process. To achieve this, an atmosphere of trust, openness and respect should be created – where the participants feel safe and free to share their experiences through dialogue, discussion and other participatory methods. There is also a need to provide a physically comfortable environment.

3. Generally, as adults grow older, their skills for observation, reasoning and analysis often grow stronger.

The purpose of learning is not merely the acquisition of knowledge or information for its own sake, but knowing what to do with such information. As a consequence, learning is not evaluated on how much information the learner has acquired or memorized but how he/she is able to translate concepts into their practical applications.

Adult learning is largely experiential. For it to be meaningful, the participants should be engaged in task-centered, problem-solving situations in the context of their real life experiences.

4. Adults, like any other individuals, have a sense of personal dignity. They should be treated with respect.

Adults have developed a self-concept of being responsible for their own decisions. They have a need to be seen and treated as capable of being independent and self-directing. Therefore, the design of learning programs should be open and flexible, giving the participants a higher degree of autonomy and self direction.

A learning environment should be created where the relationships between and among the trainer and the participants is that of equals and peers. While adults are responsive to some external motivators (higher salaries, job promotions, etc.), internal motivators for learning usually play a stronger role (increase in self-confidence and self-esteem, desire for increased job satisfaction, etc.).

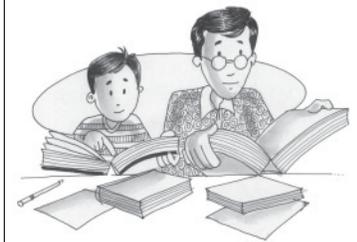
Creating an effective learning environment for adults



Child learning vs. adult learning

To create a good learning situation, it is vital to consider the nature of adult learners. The trainer should understand that adults learn very differently from children. Thus, it is important to understand the basic difference between child learning and adult learning.

One weakness common to otherwise dedicated trainers (in supposedly adult learning situations) is that their style of dealing with adult learners is no different from the traditional way of teaching children in formal school settings. The trainer dominates the learning situation by delivering a lecture; perhaps he/she may use questions and answers to involve the participants, but tends to go back to lecturing again.



Basic differences between child learning and adult learning.¹

	Child learning	Adult learning
Learning needs	Learning is for application to "real life" sometime in the future.	Learning is most often in response to needs, issues or problems relevant to present situation.
Content	Experts decide on the learning content in the form of a formal and uniform curriculum (nationwide, statewide, etc.).	Participants have a role in determining the learning content through the analysis of their needs and interests.
Orientation	Subject matter-centered; emphasis on mastery of content.	Participant-centered (needs and interests); emphasis on the process.
Methodology	Unidirectional transfer of information from teacher to student.	Information sharing that stimulates learning between/among peers through dialogue and discussion.
Nature of learners	Children have less knowledge and experience.	Adults possess relevant knowledge and experience that can be used in the learning process.
Motivation to learn	External pressure from parents or teachers; competition for grades, consequences of failure.	Driven mostly by internal motivators such as desire for recognition or advancement, increase in confidence or self esteem; better quality of life, etc.
Role of teacher/trainer	Possesses the expertise and authority; source of knowledge and information.	Facilitates the process by which participants' experiences are acknowledged and used in the learning process.

¹ Adapted from Srinivasan, Lyra. 1992. Options for Educators: A monograph for decision-makers on alternative participatory strategies. PACT/CDS, Inc. NY.



Creating an effective learning environment for adults



Paulo Freire calls this content-focused and teacher-dominated learning as the **banking system**, which is like withdrawing information from the teacher's head and depositing it in the students' heads. The students record, memorize, and repeat mechanically the prescribed content which is like receiving, filing, and storing the deposit. Carl Rogers, an educational psychologist calls the same concept as the **jug and mug** concept of education where the teacher (jug) pours knowledge into the passive student (mug).

At the heart of learning situations involving adults, instead of providing the "right" answers, the trainer creates an environment where participants are engaged in critical thinking and arrive at the answer by themselves. The trainer poses the problem, facilitates a process by which the participants search the causes and analyze the situation, discover the solution and come up with an action plan.

Importance of visualizing and self-discovery in adult learning

Tests have shown that people remember 20% of what they HEAR, 40% of what they HEAR and SEE, and 80% of what they DISCOVER FOR THEMSELVES!



The statements above stress the need to look at adult learning from a different perspective. For example, who among us go to the community, teaching new practices or technologies for villagers to adopt? Do we first discuss with them if these are indeed what they need or want? When they choose to reject our ideas, do we bother to find out the real reasons behind their decisions? When projects fail, do we try to analyze with them what happened, or just blame them for not knowing what is good for them and their community?

Creating an effective learning environment for adults



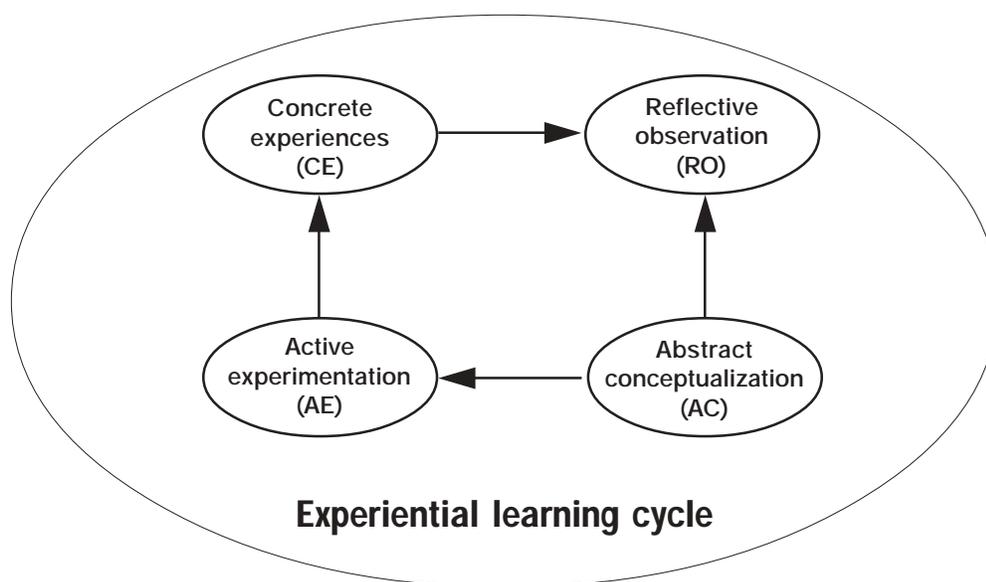
Helping adults learn is far more complex than teaching children. Teaching a set of prescribed content over and over again is much easier than dealing with a process that is likely to change whenever we deal with a different set of people.

In an ever-changing environment, an emphasis on content-centered learning may result in the accumulation of knowledge that may someday become irrelevant. The emphasis on the process stems from the strategic vision that when we help people learn how to learn, they will be able to use such skills to deal with the changes confronting them.

As trainers we should be aware that people have different learning styles. Some want theory first followed by practice, others want to do the practical first and then have the theory explained. A widely accepted theory about how adults learn is the experiential learning cycle described by Kolb. This is also referred to as discovery learning, which lies at the heart of participatory technology development (PTD).

Experiential learning

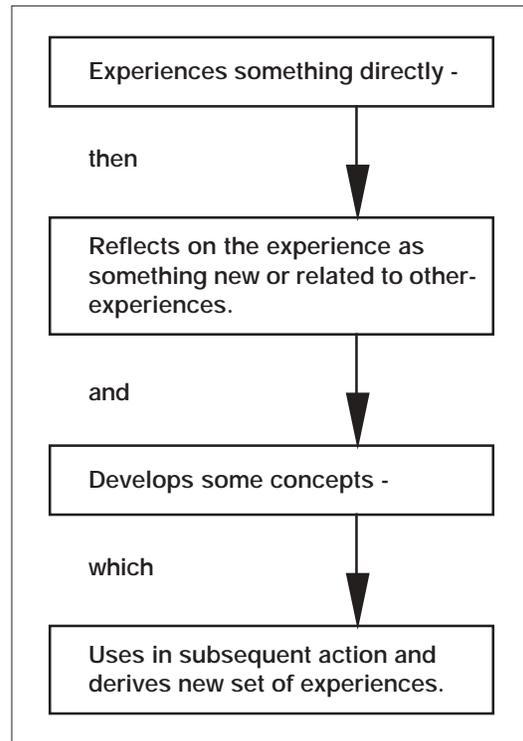
David Kolb, a development psychologist, has developed a way of looking at adult learning as an experiential process of four stages cycle.





Creating an effective learning environment for adults

- Experiential learning is defined as a process in which a person:



Experiential learning critiques the learning theories which claim that learning takes place during one's formative years in formal institutions only. It emphasizes that people learn best from their own experiences- which are real, full of feeling and meaning for the learners.

Origins of experiential learning

Experiential learning draws its origin from various theories of learning. They are as follows:

- Learning entails changes in the perception of mental processes on individual. Learning implies changes in ways of perceiving. Since each learner is unique and independent, there cannot be one standard learning process. Through a process of discovery, experimentation, self-direction, drawing one's own conclusions, learning takes place. Learning can be also guided through systematic facilitation.



Creating an effective learning environment for adults

- Each learner is in touch with the realities being studied. Learning is not merely thinking about a situation in the classroom, but also building on their practical insight to derive conceptual learning. Learning is a process which constantly seeks critical linkages between work, education and personal growth.
- Learning takes place when learners are actively involved in reflecting upon their own experiences; an intense interaction between their immediate experiences and the conceptual models facilitates learning. Experience becomes the raw material for learning.

Experiential learning, therefore, is holistic in nature. It combines experience, perception, cognition and behavior. It moves from examining one's experiences in the context of a learning situation, reflecting upon its implications and consequences, drawing both conceptual and practical understanding from it and then acting upon it.

Characteristics of experiential learning

Learning is a continuous process: Experiential learning is a continuous process of learning. Concepts are derived from and are continuously modified by experience.

Dialectic nature of learning: The constant interaction between the learner and his/her environment leads to a process of reflection-action. The learner feels conflicts between different and opposite ways of dealing with the situation. Such resolution of conflicts leads to learning; new knowledge, skills and attitudes.

Learning is a process of adaptation: Experiential learning involves a process of adaptation. It encompasses all stages of an individual's development- from childhood to old age. It occurs in all kinds of settings, formal institutions, work place, personal relationships etc. It also encompasses adaptive concepts such as creativity, problem-solving, decision making and attitudinal changes.

Learning is a process of creating knowledge: Knowledge is the transaction between personal knowledge (subjective life experiences) and social knowledge (cumulative human experiences). Since experiential



Creating an effective learning environment for adults

- learning involves an interactive process of learning, every set of experiences that is subject to reflection and analysis, creates a new learning. Old insights are also refined.

Learning is transferable: Learning has an internalizing potential, only if it can be used outside the context of /training/education/academic programme. The model of experiential learning can be applied to any set of experiences that learners have. It helps in transferring learning to real life practice.



Reference

Srinivasan, Lyra. 1992. Options for Educators: A Monograph for Decision Makers on Alternative Participatory Strategies. PACT/CDS, Inc. NY.

Creating an effective learning environment for adults



Attachment 1

Guide questions: (Adult and learning)

- a. **Ask:** Who is an adult?
Discuss and try to reach an agreement on what makes a person an adult.
- b. **Ask:** What is learning?
Discuss and try to reach agreement on what is learning.



Attachment 2

Instruction sheet A: Individual work [5-10 minutes]

- a. Think of something that you have learned as an adult – something that you found enjoyable or useful in your daily life. It should be something you vividly remember learning.
- b. Carefully think through the whole process of the learning experience and write your answers to the following questions:
 - What did you learn?
 - Who helped you learn it?
 - Why did you (have to) learn it?
 - How, in what way, did you learn it?
 - Where, in what kind of situation, did you learn it?
 - What made your learning easier or more difficult?



Creating an effective learning environment for adults

Attachment 3

Table for gathering responses on learning experiences of participants

What was learned?	Who helped you learn?	Why did you learn it?	How did you learn it?	Where did you learn it?	What made it easy?	What made it difficult?

Process questions

- a. **Ask:** What conclusions can be made about adult learning based on the experiences that you have shared? What makes adults (decide to) learn something? What factors usually aid or hinder adult learning?
- b. **Ask:** Who was the “teacher” in the adult learning experience described? What was his/her role? How were these learning situations different from the formal education we are all familiar with?



Creating an effective learning environment for adults



Attachment 4

OHT

"Learning occurs best when..."

Provides feedback
participatory

Environment is safe and comfortable

Experiential

responsive to immediate needs
reflective

Shows respect for the learner



Creating an effective learning environment for adults

Importance of visualizing and self-discovery in adult learning



Tests have shown that people remember 20% of what they HEAR, 40% of what they HEAR and SEE, and 80% of what they DISCOVER FOR THEMSELVES!

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Attachment 6

Instructional Sheet B: Group Work [40 minutes]

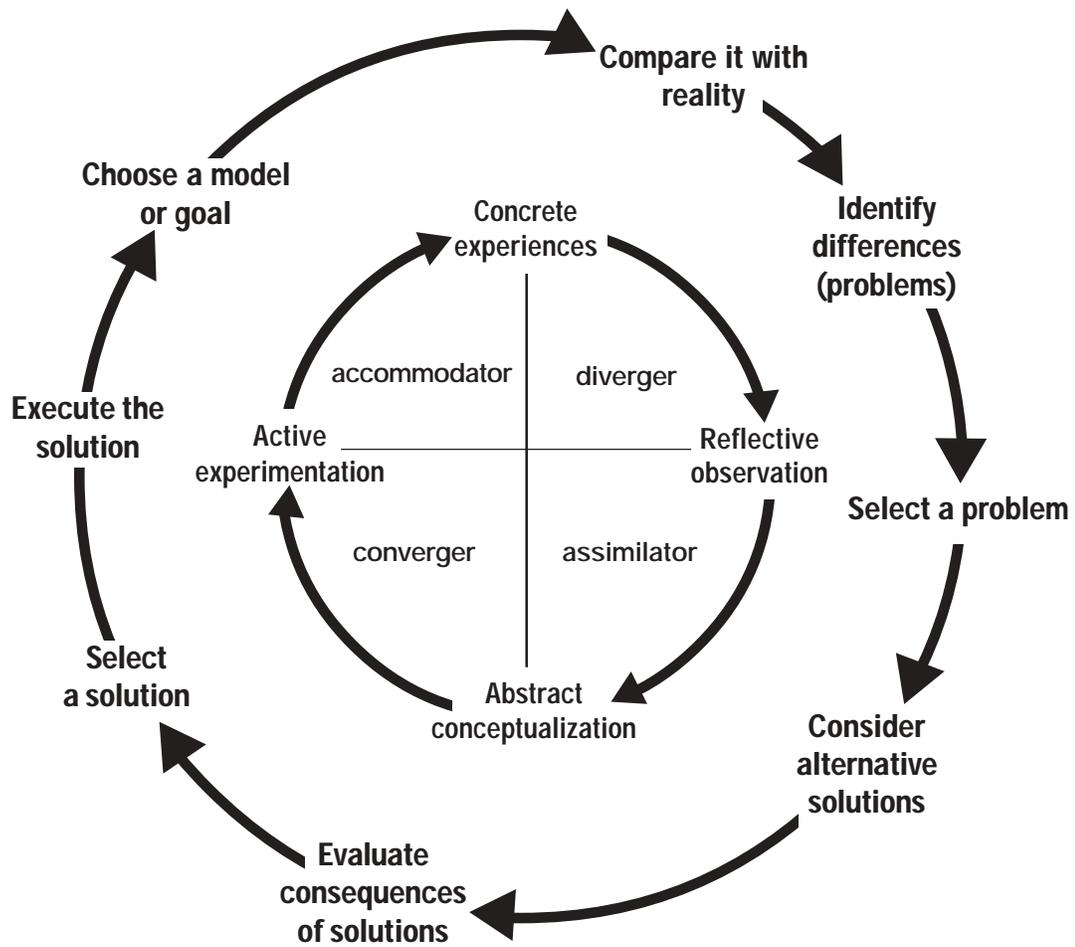
Although the principles and assumptions about adult learning and their subsequent implications to our work (i.e. field programs, training) appear to be "common sense" to the participants, they must be deliberately applied so that their value can be better understood and appreciated. In this exercise, the participants will design a strategy for a development project/program, incorporating these principles and assumptions.

- a. Identify the assumptions and principles of adult learning that you currently apply in your work. Share how they are being applied. Specify the particular project or program.
- b. Select a project/program presently being implemented by one member of your group. What is the goal of project/program? What specific change(s) is it trying to achieve?
- c. Work together to design a new strategy to accomplish the change, applying the assumptions and principles of adult learning.
- d. On a newsprint, outline the main steps in your strategy. Using a marker of different color, indicate the assumption or principle underlying each of the steps.



Creating an effective learning environment for adults

Experiential Learning Cycle



An expansion of Kolb's experiential learning cycle put together from the SAToT experience.

Creating an effective learning environment for adults



Attachment 8

“Teaching”

“No woman and man can reveal to you nothing but that which already lies half asleep in the dawning of your knowledge.

The teacher who walks in the shadow of the temple, among his/her followers, gives not of his/her wisdom but rather of his/her faith and his/her lovingness.

If he/she is indeed wise he/she does not bid you enter the house of his/her wisdom, but rather leads you to the threshold of your own mind.

The astronomer may speak to you of his/her understanding of space, but he/she cannot give you his/her understanding.

The musician may sing to you of the rhythm which is in all space, but he/she cannot give you the ear which arrests the rhythm, nor the voice that echoes it.

And he/she who is versed in the science of numbers can tell of the regions of weight and measure, but he/she cannot conduct you there.

For the wisdom of one person lends not its wings to another.

And even as each one of you stands alone in God’s knowledge, so must each one of you be alone in his/her knowledge of God and in his/her understanding of the earth.”

* Adapted from Gibran, Khalil. 1995

Gender in sustainable agriculture training



Duration

5 hours

Description

The session examines the respective contribution of women and men in the farm and in the household. It analyzes some prevailing practices and their underlying assumptions bearing on equity and sustainable agriculture. It offers a perspective through which values and attitudes may be affirmed or modified, and practices changed.



Objectives

At the end of the session, participants should be able to:

- identify the roles of men and women and analyze the values and attitudes underlying those roles;
- discuss gender equity as an imperative to sustainable agriculture; and
- examine one's personal perspective on gender equity.

Learning aids and materials

- Newsprint
- Marking pens
- Metacards
- OHT: "Gender Specific Activity Calendar", "Access and Control Profile"
- Video documentary : Power to Change (#3 of Local Heroes, Global Change, PBS, May1990)



Gender in sustainable agriculture training

■ Procedure

Activity 1: Using the gender specific activity calendar [2 hours]

- Divide participants into two groups. Assign a male farmer to one of the groups and a female farmer to the other group.
- Ask each group to draw a large circle on newsprint and slice it into portions to show the amount of time spent doing a particular activity in typical 24-hour period by the person assigned to the group.
- In plenary, let the two groups present their findings and lead a discussion by asking the following questions:
 1. What major differences do you notice in the way men and women farmers spend their day?
 2. What are the implications of these differences to the farm and family?
 3. What are some of the consequences of these differences to men/women?
 4. What are some of the consequences of these differences to society?



Activity 2: Using the analysis of workload, access and control over resources [2 hours]

- Divide participants into two groups. Distribute the Gender Specific Activity Calendar (Attachment 1) to one group and the Access and Control Profile (Attachment 2) to the other. Let them discuss in the groups and fill in the two attachments.
- Discuss the information generated from this activity in relation to:
 1. **Division of labor**
 - Who does what for how long?
 - Is the workload equitable?
 - What type of technology is used?

Gender in sustainable agriculture training



2. Access and control over resources

Who owns the farm equipment?

Who has better access to cash?

3. Decision-making

How are decisions made?

Who has a say on what to do with the farm animals and other assets?

Who decides on the use of proceeds from the sale of farm produce?

- When the *who*, the *what*, and the *how* questions have been answered, lead the discussion on to the critique level by asking *why* for every major practice. Give particular attention to stereotypical comments, i.e. "The women do not know which and when to sell farm animals." or "It's insulting to men when women speak up in mixed company."
- Summarize the comments in OHT and present to the group for validation (have a separate copy on newsprint for later use).





Gender in sustainable agriculture training

Activity 3: [1 hour]

- Distribute two colors of meta cards. **Yellow** represents conditions that can be changed but would take time: consultation and consensus with community needed. **Red** represents conditions that can be changed by the individual him/herself. It can be implemented in the individual's own household.
- Each participant writes down on the meta cards and posts them on the board or wall. Place the red and yellow cards in separate columns.
- **Discussion:** Are there common items under the red and yellow cards? Elicit opinion and insight on the whys of each item. Affirm the red entries and give a strong signal that the yellow too, begins with individual.
- Input on change through the video Global Change, Local Heroes or other case studies.



Suggested reading material:

CEDPA. 1996. Gender and Development. Massachusetts. USA.

Oxfam. 1994. The Oxfam Gender Training Manual. Oxfam UK and Ireland.



Gender in sustainable agriculture training



Introduction

Sustainable agriculture attempts to improve the life of farming families and communities. It combines participatory processes on the farm, in the household, and the community. It empowers stakeholders. It promotes environment- friendly measures and technologies. Cutting across these concerns is the condition of the women and children as stakeholders along with the men.

Gender is a basic organizing principle of societies. In every society, men and women play roles intended to contribute to the welfare of the family. These roles may be carried through generations by traditions and norms. In many societies, however, women are put at a disadvantage by the given gender roles. It is necessary to examine and try to change those roles which promote inequalities between men and women.

In many societies, women have responsibilities related to their reproductive roles. Women's productive work is usually less visible and have less control over production resources. SA tries to change this by promoting equal opportunities for men and women.

When attention shifts from the picture of only a male farmer to include women and children, a similar shift in expectations and strategies should take place. For the SA trainer, this shift is important if one is to communicate the goals and processes of SA to its stakeholders.

Work and workload

Each member of a farming household provides a vital contribution to sustainable agriculture. Family labor is much prized in this setting. The viability of a farm rests on the availability of labor. That family labor is not immediately exchanged for cash does not diminish its importance. Its cash value is deferred until farm crops and animals have been sold. But their value as sustenance for the family is immediate.



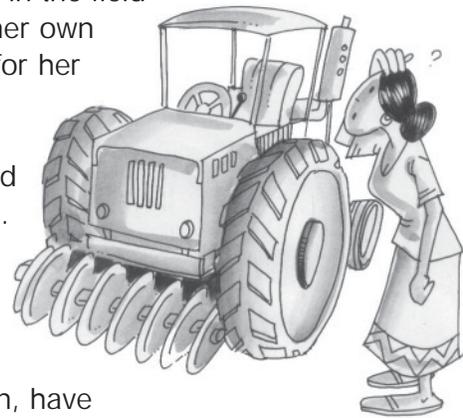


Gender in sustainable agriculture training

- Working in the field from sunrise to sundown limits a mother from attending to the needs of growing children. At the same time, a nursing mother may be torn between being out in the field and attending to the baby. Outside of her own household, other duties also compete for her time and attention.

The issues here are *the type of work* and *the amount of work* assigned to women.

Mechanization aims to reduce labor and increase yield. In some instances it has shortened men's labor but increased that of women. Plowing and harrowing, traditionally assigned to men, have been reduced tremendously by the use of the tractor. With mechanization that shortened labor, the farmer can now plant more than once a year. The result is more yield. Increased income, is of course, desirable. However, looking at it more closely, whose labor has been shortened? With repeated planting comes the need to weed twice as before. Unmechanized weeding, which women do, will become twice as burdensome as before mechanization.



Therefore, mechanization may not necessarily lead to an equal share of labor provided by men and women on the farm. There is a need to examine the amount of work done by men and women on the farm in order to move towards equity.

Access and control over resources

With no control over land, labor, farm input, capital, tools and equipment plus restricted access to education and training, long term poverty is inevitable. But when access and control over resources are opened up, the fight against poverty begins.

The same is true with households and communities. When there is shared access and control over resources among men and women, including children, life is more likely to improve.

Gender in sustainable agriculture training



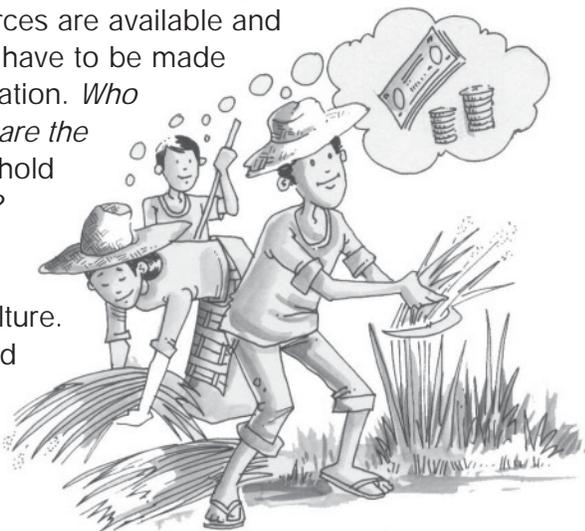
Questions that must be asked are the following:

- Who owns the land? Where women cannot own land, their chances to get credit is nil. Without credit, whatever capital there is may not be augmented. Similarly, the hiring of labor and acquisition of tools and equipment, are severely limited.
- The capability to harness material resources, assuming they are available, is greatly enhanced through education and training. However, similar questions must be asked. Does the culture support girls and boys going to school? If there are schools, are they situated near enough to settlements so as not to endanger girls who venture out to attend them?
- Are there available extension services? If there are, do they include women? Are extension workers approaching women too? Does the community allow it? Are training programs designed with women farmers in mind? Are they offered in venues and times accessible to women? Training programs fail when the above concerns are overlooked.

Decision-making

An overriding issue across the questions already raised, is that of *decision making*. Even when all resources are available and income increased, decisions have to be made regarding their use and allocation. *Who makes the decision and how are the decisions made* at the household and in the community levels?

In short, *participation* holds the key to sustainable agriculture. Participation in all aspects and levels of activity in the household and in the community by all the members ensures equity. It





Gender in sustainable agriculture training

- guarantees that labor is shared according to each one's capability and resources are allocated according to each one's need. Likewise, education and training are availed of equitably and decision-making is a co-responsibility.

Addressing gender issues deals with concerns that affect the well being of all.

Cultural appropriateness

One of the principles of SA is *cultural appropriateness*. It states among others that "culturally appropriate agriculture systems...give due consideration to cultural values, including religious beliefs and traditions in development of agricultural systems...cultural roots are as important to agriculture as plant roots. It is equally important that the highest values apply to human interactions since without strong communities and vibrant cultures, agriculture will not flourish."

In matrilineal societies, the earth was referred to as *mother*, and by extension, considered woman as life-giver, women enjoyed equal status with men, just like what SA is advocating. This system has been supplanted by paternalism, a more recent phenomenon which resulted in the subjugation of women. To appeal to the older matrilineal culture is tempting because of its women empowering features. However, doing this puts one in direct conflict with current paternalism. This is a challenge for SA trainers.

Gender in sustainable agriculture training



Attachment 1

OHT

Sample Gender-Specific Activity Calendar

	J	F	M	A	M	J	J	A	S	O	N	D
CROPS												
Plowing W/M/C												
Planting												
Hoeing												
Weeding												
ANIMALS												
Herding												
Watering												
Milking												
HOUSEWORK												
Cooking												
Collecting Firewood												
Feeding the Baby												
OFF-FARM												
Selling Crops												
Other Activities												

Legend:

- W : Women
- M : Men
- C : Children



Gender in sustainable agriculture training

Attachment 2

OHT

Access and Control Profile

Resources	Access		Control	
	Women	Men	Women	Men
Land				
Equipment				
Labor				
Cash				
Other				
Benefits				
Outside income				
Asset ownership				
Basic needs				
Education				
Political power				
Other				



Participatory technology development



Duration

6 hours

Description

Worldwide, the most frequently used approach in agricultural development is transfer of technology. However, limitations of this concept are being increasingly realized. For instance, promotion of technologies irrelevant to resource-poor farmers leads to poor adoption rates. To counteract the shortcomings of this traditional model, more participatory approaches towards agricultural development have evolved. Participatory technology development (PTD) is an example of such a method that encourages farmers to gain control over their own (agricultural) development.

Objectives

At the end of the session, the participants should be able to:

- discuss the concepts of PTD and the main steps involved;
- explain the importance of PTD for SA development;
- recognize the value of Indigenous Knowledge (IK) in PTD processes; and
- analyze cases that highlight some methods used in PTD.

Learning aids and materials

- Slideshow: "Community-based Experimentation and Extension"
- OHTs: "PTD Framework"; "What is IK?"; "Characteristics of Local Systems"; "Why IK is useful?"; "Decisions when using IK in projects"; "Talking Positively About PTD"
- Instruction sheets: "Working with Local Knowledge"; "Talking Positively About PTD"; "The Bean Experiment"; "The Lady who Once Had a Pain"
- Newsprints, permanent markers



Participatory technology development



TIPS

- Video on “Strong Together” can replace the slideshow
- Cases can be presented using other creative methods such as role play, puppet show, story board, or theater.
- Cases that raise awareness on the importance of PTD other than the one used in the session can be presented (e.g., several cases on PTD can be found in *Advancing PTD: Workshop Proceedings*).

■ Procedure

Activity 1: Slideshow on the concepts of PTD [1 hour and 30 minutes]

Present the slideshow “Community-based Experimentation and Extension” (see Attachment 1 for the guide on presentation and discussion).

Activity 2: Interactive lecture on phases of PTD [30 minutes]

In the form of interactive lecture, repeat the main steps of PTD and incorporate participants’ personal experiences. Use the prepared OHT on “Phases of PTD” (see Attachment 2).

Activity 3: Discussion on integrating indigenous knowledge [1 hour and 30 minutes]

Briefly introduce the main points covering the following questions:

- what is indigenous knowledge?
- why is indigenous knowledge important for SA?
- are all traditional practices good for agriculture? and
- how can knowledge be incorporated into PTD?

In small groups, participants discuss the impacts of local knowledge on agricultural production system (see Attachment 3).

In plenary, participants share the results of their discussion. Encourage the participants to focus the discussion on the issues related to the breakdown of traditional/local practices and the reasons for this. End the discussion by stressing that there are different ways to integrate local knowledge with PTD to make agricultural production more sustainable.

Wrap up the activity using the OHT on “What is IK?”, “Characteristics of local systems”, “Why IK is useful?” and “Decisions when using IK in projects ” (see Attachments 4, 5, 6 and 7).

Participatory technology development



Activity 4: Workshop on practicing PTD [2 hours and 30 minutes]

Form four groups and give each group one of the four assignments. Ask them to prepare their assignments according to the instructions (see Attachments 8, 9, 10 and 11) for the different assignments).

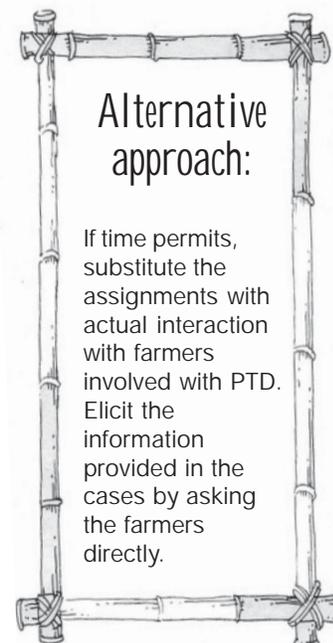
The groups present their respective assignment in the plenary. After each 15-minute presentation, give 5 minutes for discussion. Discussion should highlight the specific lessons from each case (see Attachment 12).

Wrap-up with special focus on strategies to introduce PTD (see Attachment 13) and difficulties encountered by staff in changing from teaching to facilitating.



Suggested reading materials

- Ashby, J.A., Quiros, C.A. and Rivers, J.M. 1990. "Farmer Participation in Technology Development: Work with Crop Varieties". In: Chambers, R. Pacey, A. and Thrupp, L.A. (eds), *Farmer First: Farmer Innovation and Agricultural Research*. IT Publications, London UK.
- Chambers, R. 1995. "Paradigm Shifts and the Practice of Participatory Research and Development." In: Wright, S. and S. Nelson (eds). *Power and Participatory Development: Theory and Practice*. IT Publications, London, U.K.
- IIRR. 1996. *Recording and Using Indigenous Knowledge: A manual*. International Institute of Rural Reconstruction. Silang, Cavite, Philippines.
- IIRR, ETC. 2002. *Participatory Technology Development for Agricultural Improvement: Challenges for institutional integration*. International Institute of Rural Reconstruction, Philippines and ETC Ecoculture, the Netherlands. 110 p.
- Scheurmeier, U. and Sen. 1994. *Starting-up Participatory Technology Development for Chemical Husbandry in Adhra Pradesh*. LBL, Lindau, Switzerland.
- SIMAS. 1995. *La Canasta Metodologica, Servicio de Informacion Mesomericano sobre Agricultura Sostenible*, Apartado Postal A-136, Managua, Nicaragua
- Veldhuizen, L., A. Waters-Bayer and H. De Zeeuw. 1997. *Developing Technology with Farmers. A Trainer's Guide for Participatory Learning*. ZED Books, London, UK.



Participatory technology development



What is PTD?

Participatory Technology Development (PTD) is a purposeful process of creative interaction between local groups (of male and/or female farmers) and outside facilitators (extension worker, researcher).

As partners in agricultural development, we seek to better understand the dynamics of local livelihood systems, define priority problems and potentials, and experiment with selected "best-bet" options for improvement. The options come from both indigenous knowledge and formal science. The technology development process aims to solve current problems and develop sustainable forms of resource use that maintain the value of natural resources for future generations.

PTD strengthens the capacity of resource users to analyze ongoing processes and develop relevant innovations fitted for new conditions and opportunities. This includes institutional development that strengthens the self-determination of local resource users. Organizational development capacities are enhanced through planning, experimentation, monitoring and evaluation of concrete activities.

PTD also heightens awareness of cultural change, as the situation and responsibilities of different gender and interest groups are taken into account.

Important steps in the PTD process

Step 1 - Relationship/confidence building

The first step is to build a relationship with the community. This may be enhanced if the facilitator is introduced to the community by somebody they already know and respect. Personalities like village elders, pastors, community workers among others may be useful in this case.

During introduction, the roles of the facilitator and the community should be clear, including the directions to take and the limits.

This may be followed by community walks where some members of the community and the extension worker visit representative areas and





Participatory technology development

- informally discuss farming experiences in the area (People will accept you if they are convinced you are working for their welfare and you respect them and their situation).

The facilitator should also gather secondary data about the area before or after the introductions. These include existing information on population, land use, climate, farm enterprises, social/cultural settings, etc.



Step 2 - Problem analysis and priority setting

The next step should be participatory appraisals. Here, the facilitator guides the community to assess their situation. Key questions include:

- Problems (what, where, how and why)?
- What knowledge exists about the problem(s)?
- What are the acceptable solutions/achievements?
- What are the priorities?
- What action do they plan to take?

During this step the facilitator may use small groups of farmers to help in problem analysis. This will enhance farmers' participation in analyzing and ranking their problems. This is also a good opportunity for farmers to share experiences on indigenous solutions to their problems.

Step 3 - Looking for things to try

To try new technologies, one should build on step 2. The proposed action plans and community priorities should be screened to identify what feasible technologies to try, given the resources available.

This screening should be based on:

- are the technologies appropriate and cost effective?
- are they simple, accessible and when will they yield results?
- who will benefit?
- does the community understand them?
- where have they been tried before and what were the results?
- is knowledge on the technologies available, and who has it (indigenous & formal knowledge)?
- who is willing to try them and do they have enough resources?



Participatory technology development



Example of Livestock Keepers in Peru

Staff members of Grupo Yanapai in Peru attempted in vain to discuss livestock husbandry with local village committees. These committees consisted of men who repeatedly showed a lot more interest in crop production. At one point, one of the committees made it clear, that to start work on livestock issues, one would have to talk with women. It was decided to have separate meetings with the women to discuss their farming problems. The women prioritized their problems as:

- parasite control in sheep;
- fodder availability in dry season;
- management of communal land;
- animal selection criteria;
- seed selection and storage techniques; and
- criteria for determining seed density at planting.

Following this identification, the group started off to:

- gather knowledge within the group about the problems;
- discuss the problems with external specialists;
- evaluate the possible alternatives proposed;
- plan tests and trials (on their own fields, using their own animals); and
- implement and evaluate the tests.

Examples of experiments were parasite control with local plants, sowing legumes in fallows and communal rangeland improvement. The women decided to form a Women Agricultural Production Committee. Three of them are now existing and are fully recognized by the community as a legal entity within its organizational structure.

Source: "Farming for the future", Reijntjes, et. al., 1992.

This step should provide a more concrete work program which would identify:

- what is to be tried (technologies)?
- who will do it (actors)?
- when and for how long (duration)? and
- the expected output (benefits).

Step 4 - Trying out

This step aims to develop and implement simple and compatible experiments that can be managed by farmers themselves. In the process of trying out, the farmers' capacity to design and implement their own experiments should be strengthened.





Participatory technology development



■ The process of trying out follows:

a. Selection of the experimenters

This selection can be done through:

- Probing the community to give names of innovators in the village.
- Asking about the type of innovations previously carried out.
- Observing which farms display key differences from the rest of the farms.
- Asking the community to give names of those they consider "experts" in the technology proposed and those who can propagate the trial results easily.

b. Field visit or study tour

Those selected as experimenters should then be taken on a study tour so as to familiarize them with the innovation or the work of other innovators. The study tours should help to boost confidence of the experimenters.

c. Training

Once the experimenters have seen what other farmers are doing, they should then be given basic training in experimental methods.

Supporting farmers' experiments in Rwanda

The cooperative is planning to harvest a plot of Sesbania and incorporate the bio-mass in a raised bed. Taking a yield sample reveals that 30 tons of bio-mass/ha yields around 300 kg Nitrogen. The plot is about 25% of the size of the raised bed, which would give an application rate of 60 kg Nitrogen/ha, which seems about right for the cabbage/maize inter-crop they are planning. One farmer suggests fertilizing the Sesbania plot only. This would however increase the risk of excessive growth, lodging and disease.

But why not watch the difference in performance, and how about leaving a small area untreated so that all farmers can see for themselves. The farmers agree and together the three distinct sections are being marked (source "Farming for the future", Reijntjes et al., 1992).

Participatory technology development



The content of such training should include:

- Plan and design of simple trials
- Management of trials
- Choice of appropriate site
- Measurements/records/observations
- Analysis of results

Experiences gathered during study tours or previous workshops are very useful at this stage. Audio/visuals could also be used to support the training efforts.

d. Setting up the trials

Before setting up the trials, criteria should be developed by the farmers under the guidance of the facilitator. This criteria will be used in setting up the experiments so that some uniformity is realized across the farms.

The criteria should include:

- Objectives of the experiments
- Location of the experiments (where & how many)
- How large/what spacing/what combinations etc.
- Controls
- When the experiments are to be set up
- What measurements/observations will be made, how, when and by who
- What type of records will be kept
- What external assistance is required and when, etc.

Once the criteria are clear to all the experimenters the trials should then be set up.

Follow-up activities once the trials are set up include:

- Management of the trials
- Monitoring by the individual experimenters assisted by extension workers
- Participatory assessment and feedback sessions
- Exchange visits to other experimenters
- Record keeping





Participatory technology development



■ Step 5 - Evaluating

Evaluation of the trials begins when they are set up. The individual experimenters do their evaluation as the trials progress. Group meetings (participatory assessment & feedback sessions) during the season, should also be organized where views are exchanged and opinions formed about the trials.

This aside, it may be necessary to do an overall evaluation at the end of the experiments. This facilitates the systematic analysis of results within the village and outside. During the evaluation, the experimenters and facilitators should analyze the results on the basis of the proposed innovation and the criteria used in setting up the trials. This evaluation should also decide the course of action to be taken - whether to adopt, reject or modify the innovation. If the innovation is to be adopted, the group should recommend the techniques to be used, in order to ensure good results.

Step 6 - Disseminating the results

The dissemination of innovations developed through PTD may be accelerated by deliberately initiating activities that provide a forum for information sharing. Experimenter networks developed during the experimental phase should be mobilized to do farmer training, demonstrations and even guided visits.

In places where the community is cohesive, farmer groups rather than individuals are a better medium or channel for the dissemination. Influencing a group is easier if key members are convinced that the innovation is working and is better than what they have. The innovation is likely to even spread faster and better if such groups are formed around the experimenter. The experimenter then becomes more of an animator/farmer-teacher, while the facilitator plays the role of a catalyst and supporter. He/she facilitates:

- Farmer tours/demonstrations
- Group meetings
- Field days
- Farmer - to - farmer training
- Development of farmer manuals and audio - visuals

Participatory technology development



Step 7 - Sustaining the process

World wide experiences show that, if farmers have successfully learned to organize their own experiments, a village extension program based on volunteer trainers can easily be organized. This means that the PTD process can be sustained if it is institutionalized at the village and other levels.

One way of institutionalizing is by creating encouraging fora where farmers meet to analyze problems, identify innovations, test and propagate results.

Examples of such fora are;

- Radio programs
- Farmer prize-giving days
- Field days
- Farmer-to-farmer visits

Another way is by linking the farmers to researchers who then provide new ideas for farmers to try.



Study program by Filipino farmers

A group of farmers from Claveria, concerned about soil erosion control on steep slopes, sent six members to visit upland farmers in Cebu (a neighboring island), where an NGO had been assisting farmers to lay out contour bunds, plant hedge rows and induce natural terracing. The Cebu farmers trained the visiting farmers in laying out contours using an A-frame, bunding-ditching to establish strips and control erosion, and hedgerow planting of fodder grasses and legume trees.

The following year, the Cebu farmers paid a return visit to the Claveria farmers to observe the bunds and crops, discuss the adaptations made by the Claveria farmers, and share ideas about how the system might be further developed and improved.

(Source: "Farming for the future", Reijntjes et al., 1992).

Reference

Reijntjes, C., Haverkort, B. and Waters-Bayer, A. 1992. Farming for the future. An introduction to Low-External-Input and Sustainable Agriculture. ILEIA, Leusden, Netherlands.



Participatory technology development



Attachment 1

Slideshow presentation and discussion

1. Put up a newsprint with three questions and explain them:
 - Q1. Which phases/sort of activities can you distinguish?
 - Q2. Which participatory methods or techniques are used in each phase?
 - Q3. Comparing the two cases in the slide presentation, which one is more effective? Explain why? **[5 minutes]**
2. Show the slides series "Community-based Experimentation and Extension" produced by World Neighbors. **[20 minutes]**
3. In the plenary, invite participants to reflect on the slideshow and give time for some comments to trigger discussion. Ask participants what happened in the story and why it happened. Do they recognize the story as real? Is this what happens in their own working situation? **[5 minutes]**
4. Ask the participants to form small groups of 4 - 5 people and answer the three guide questions. **[30 minutes]**
5. In the plenary ask the participants to share their answers. Write the answers down in the following table on the board. Ensure that all groups get equal chances to contribute (see Attachment 1- "Possible answers to Q1 and Q2").

Answers to Q1 and Q2

Phase/cluster of activities	Methods and techniques

Invite the participants to come up with appropriate labels for the cluster of activities in the first column, similar to the PTD phases mentioned in the handout.

Make a listing of the answers supplied to Q3.

Summarize the points made by the groups, with emphasis on the basic principles underlying PTD.

Alternative approach: use cards and cluster them.



Participatory technology development

Attachment 1 . . . continued

Possible answers to Q1 and Q2

Phase/cluster of activities	Methods and techniques
1. Awareness raising/need for change.	Referring to the past.
2. Getting started, problem identification/ meetings, analysis and looking for solutions.	Visiting village leaders, community meetings, group discussion, and community walk.
3. Preparation of tests and designing of experiments.	Training of voluntary trial farmers, workshops.
4. Implementation of tests, trying things out (including monitoring).	Tests on own plots, experiments, group meetings, field visits.
5. Evaluation of tested technologies, sharing the results and decision making for future activities	Comparing different results, visualization techniques, self-evaluation training of farmers to become extension workers, farmer-to-farmer training.
6. Sustaining the process, strengthening relationships, participatory monitoring.	Maintaining/building (new) institutions

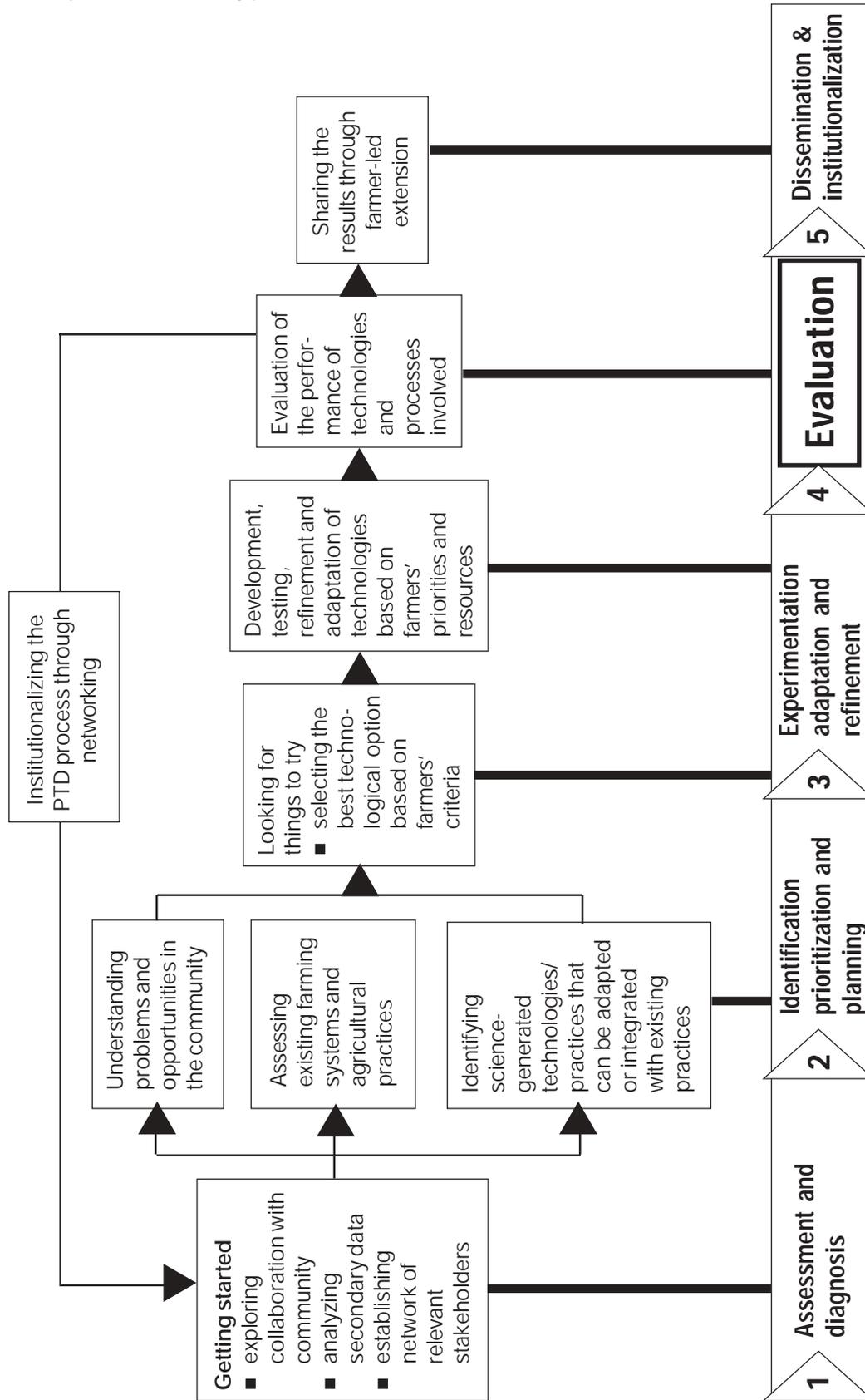
Participatory technology development



OHT

Attachment 2

Phases of PTD





Participatory technology development

Attachment 3

Instruction Sheet

Working with indigenous knowledge

1. Form small groups of 4-5 people. Discuss one or two indigenous practices linked to agriculture with which you are familiar. Discussion should focus on the positive and negative impacts of the practices on the agricultural production system.
2. Using the following matrix, summarize the results of your discussion.

Indigenous practices	Positive aspects	Negative aspects

3. Write the workshop outputs on newsprint for presentation in the plenary.

Participatory technology development



Attachment 4

OHT

What is indigenous knowledge?

- IK can be defined as the knowledge indigenous peoples or any other defined community have developed over time and handed down from generation to generation, often by word of mouth.
- IK forms the basis for decision-making in all activities such as food cultivation and harvest, health care, fishing and education (Warren, 1991).
- To be indigenous, knowledge must be an active component of a culture rather than being merely present. It must be stored, communicated and used by its members (Morin-Labatut and Akhtar, 1992)

Source: IIRR. 1996. Recording and Using Indigenous Knowledge: A manual. International Institute of Rural Reconstruction. Silang, Cavite, Philippines.



Participatory technology development

Attachment 5

OHT

Characteristics of local systems

- Most local people are generalists
- IK systems are holistic
- IK systems integrate culture and religion
- IK systems minimize risk rather than maximize profit

Source: IIRR. 1996. Recording and Using Indigenous Knowledge: A manual. International Institute of Rural Reconstruction. Silang, Cavite, Philippines.

Participatory technology development



Attachment 6

OHT

Why is IK useful?

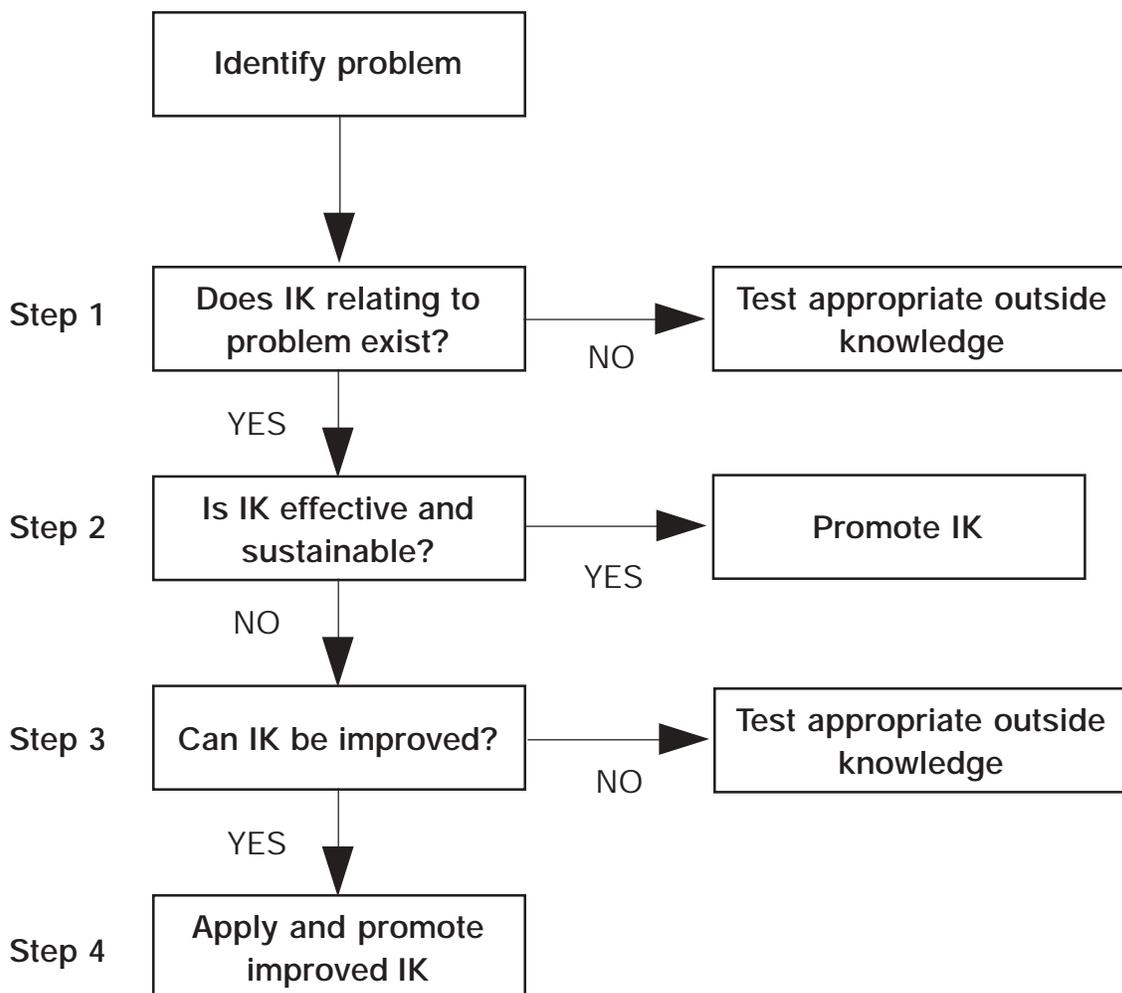
- IK is the basis for self-sufficiency and self-determination for at least two reasons:
 - People are familiar with indigenous practices
 - IK draws on local resources
- IK provides effective alternatives to western know-how
- Indigenous technologies and practices are often cheaper than western ones

Source: IIRR. 1996. Recording and Using Indigenous Knowledge: A manual. International Institute of Rural Reconstruction. Silang, Cavite, Philippines.



Participatory technology development

Decisions when using IK in projects



Source: IIRR. 1996. Recording and Using Indigenous Knowledge: A manual. International Institute of Rural Reconstruction. Silang, Cavite, Philippines.

Participatory technology development



Attachment 8

Instructional Sheet

Assignment no. 1

Talking positively about PTD*

- Translate key expressions such as “improving the situation”, “skills and knowledge”, “things that work” and “working together” into the local language of the area you work in. Do this individually. Write down the translation for discussion in the group.
- The group discussion of the results should aim to gain a joint understanding of the key expressions. What causes the differences in the choice of local terms? What do we really mean by PTD?
- Make a literal translation back into English of the local expressions.
- Discuss the following questions:
 - Who in the village would use these local words?
 - Would a poor farmer use them or only the village chief?
- Present the results of the workshop in a creative manner to the plenary.

* Adapted from Veldhuizen, L.A. et al. (1997)



Participatory technology development

Attachment 9

Instructional Sheet

Assignment no. 2

“The bean experiment”*

- Read the case “The Bean Experiment”.
- Discuss the following questions:
 - How would you set up an experiment, e.g. on the different lines of bush beans, to get results with data differentiating preferences according to gender?
 - Would women be able to take part in the experiment? What are the possible constraints you see that might prevent women’s participation?
 - What suggestions do you have to overcome such constraints in your own situation?
- Systematize the results of the group discussions for the plenary session and discuss the outcome. Present the case as a mini-farmer workshop.

*Adapted from Veldhuizen, L.A. et.al. (1997)

Participatory technology development



Attachment 9 . . . continued

Case study

"The bean experiment"



Individual men and women farmers were shown samples of seed from different lines of bush beans identified as promising for their area by the ABCD bean program. Each farmer was asked to indicate those grain types that were of interest and those less acceptable. Their ranking varied somewhat from that of the breeders, because their most important criterion for acceptability was grain size. There was, however, one intriguing exception to this rule: the interest shown in a small-grain variety.

The interview in which farmers made these initial selections was analyzed. This suggested that the unexpectedly high ranking given to the small-grain variety was the result of women taking part in the selection. The women perceived that, traditionally, small-grain varieties similar in appearance to this type had been more flavorful and higher yielding. Women regarded a small-grain type as desirable from the viewpoint of the subsistence and consumption objectives of the small farm. Men, on the other hand, were selecting grain types for larger size, primarily with a view to marketability.

Source: Ashby, J.A. et.al. (1990)



Participatory technology development

Attachment 10

Instructional Sheet

Assignment no. 3

“The lady who once had a pain”*

- Read the story from the following comic strip.
- Reflect on the story in two steps. First, look at the actual case and reflect on the following questions:
 - Why was the old lady unable to respond to the old man’s question?
 - Which of the cures worked?
 - How can we know? Why?
- Relate the results of this reflection to your work in experimenting with agricultural innovations:
 - What happens when we try out several innovations on the same plot at the same time?
 - If we do well, or even if we don’t, how can we determine what caused it?



Source: PTD Circular 4, 1995; adapted from SIMAS, 1995.

Participatory technology development



Attachment 10 . . . continued

"The Lady Who Once Had a Pain"





Participatory technology development

Attachment 11

Instructional Sheet

Assignment no. 4

“The lady who once had a pain”

Sharing of Experiences on PTD

- Share in the group your own experiences on the use of traditional technology.
- Discuss and choose one striking example of a traditional technology used in your work situation.
- Think of questions like:
 - What indigenous knowledge do farmers use?
 - What formal science is it combined with?
 - How are the technologies/practices developed?
 - What adaptations do farmers make?
 - How are the technologies shared or extended to others?
- Present the case to the plenary in a creative way.

Participatory technology development



Attachment 12

Discussion guide

- "Talking positively about PTD". This encourages reflection by participants about their understanding of PTD.

After the presentation on this topic, show the OHT on "Talking Positively About PTD". (Attachment 13)

The statements on the OHT are selected to encourage a change in participants' perspectives - from a problem analysis reflex ("what is your problem and what are your needs?") to an exploratory approach ("how could this situation be improved?"). However, other statements that evolve from the ongoing training process could also be selected for this activity.

- "The Bean Experiment". This raises awareness of considering gender in analyzing farmers' problems.

Highlight the constraints based on factors within the household, the relation between husband and wife, the project implementers and other external factors.

- "The Old Lady Who Once Had a Pain". This creates awareness on the need for systematic experimentation.

In the discussion, it may be concluded that because several cures were tried at the same time, we cannot tell whether the old lady was cured by one alone, by a combination of two of them, or by all three jointly. In order to be sure, one would have to test each cure separate on three people with the same pain, or one person with the same pain at three different times.

Similarly, one may conclude that a farmer who tries out a new fertilizer along with some new seeds planted using a new spacing in his plot, will not be able to compare the results with the normal plot. One must always compare one innovation at a time. By preparing several small plots, it is possible to compare the outcome of each innovation separately in relation to the normal plot.



Participatory technology development

Attachment 13

Talking positively about PTD

SAY:

- "We want to discover opportunities to improve the situation."
- "We must understand the situation here, and nobody knows it better than you."
- "What could be done? How can we join forces to discover what can be done?"
- "We want to combine our skills and knowledge with yours. Hopefully we can join hands to find new useful things at work. We want to do this, because we want our work to be useful to you. Otherwise, there is no reason for our work."
- "What is the situation here? What can be done about it? How can we join forces to do something about it?"

AVOID SAYING:

- "We have come to find solutions to your problems."
- "You must tell us what problems you have."
- "How can we help you?"
- "What do you need?"
- Avoid talking of material inputs and money. When asked, explain that such things might be needed, but we are interested more in working together. If they are only interested in getting materials and money from us, then we are not interested in doing PTD with them.



Source: Scheuermeier and Sen (1994)



Approaches to farmer-led extension

Duration

3 hours

Description

Sustainable agriculture (SA) is participatory in nature and aims to provide more control to the farmers. This is also true for technology development and dissemination. A sustainable way to spread promising SA technologies is through farmers themselves which is called farmer-led extension (FLE). However, there are no clear recipes for applying FLE. It can take many forms, depending on the work philosophy of the development organization, the level of work of the farmer promoter (FP), to whom the FP is responsible, and the characteristics of the project and extension work.



Objective

At the end of the session the participants should be able to:

- explain the concept and practice of FLE; and
- cite at least eight considerations they have to consider when applying the FLE concept and practices.

Learning aids and materials

- OHT: "Different Extension Approaches"
- Video: "Farmer-led Extension"



Approaches to farmer-led extension

■ Procedure

Introduce the session by linking it with the session on PTD. Highlight the idea that the farmers, being the main actors in developing SA technologies, would be the best persons to share those technologies.

Activity 1: Video presentation on FLE approaches [40 minutes]

- Through interactive lecture and with the aid of the OHT, introduce the concept and some practices of FLE.
- Show the video “Farmer-led Extension” to introduce FLE approaches.

Activity 2: Panel discussion on analyzing FLE concepts [2 hours, 20 minutes]

- Provide participants with a framework for analyzing FLE (Attachment 1). Ask them to analyze the FLE concept within their own programs and experiences.
- To share the results, organize a panel consisting of three participants who have applied FLE approaches in their organization. One of the participant volunteers is selected as the chairperson and is given a number of statements to be commented (one by one) by the panel members (see Attachment 2 for the list of statements). After giving their comments, invite the audience to respond by adding their experience and/or comment on the views of the panel members.
- Summarize the main learning points from the discussions.



Approaches to farmer-led extension



Suggested reading materials

- Brown, D. and Kortess, C. 1997. Institutional Development of Local Organizations in the Context of Farmer-led Extension: The Agroforestry Program of the Mag-uugmad Foundation. Agricultural Research & Extension Network Paper No.68. Overseas Development Institute, London.
- Bunch, R. 1996. "People-centered Agricultural Development: Principles of Extension for Achieving Long-term Impact." In: Farmer-led Approaches to Extension. Agricultural Research & Extension Network Paper No. 59a. Overseas Development Institute, London.
- Scarborough, V., Killough, S., Johnson, D.A. and Farrington, J. (eds.). 1997. Farmer-led Extension: Concepts and Practices. ITDG Publishing, London
- Scoones, I. and Thompson, J. (eds.) 1994. Beyond Farmer First. ITDG Publishing, London
- Selener, D., J. Chenier, R. Zelaya, et. al. 1997. Farmer-to Farmer Extension: Lessons from the Field. IIRR: New York.



Approaches to farmer-led extension

Farmer-led extension

Most rural poor live in areas where agricultural conditions are complex, diverse and risk prone (CDR). Development and spread of improved, site-specific technologies for these areas is particularly important. Yet, conventional technology transfer and other agricultural extension approaches, e.g. training and visit (T&V) system, remain unaffordable for many countries and have often served such areas poorly. This is due to their inability to be site specific and be more responsive to the needs of a particular farmers' group. Furthermore, the necessity of developing site specific, productivity-enhancing technologies for CDR areas is aggravated by extremely difficult conditions in these areas – all these factors have led to poor performance of transfer of technology, or TOT, approaches.



Failure of conventional agricultural extension approaches has prompted development organizations to recognize the important roles that farmers can play in disseminating agricultural practices. In fact, one of the basic features of SA is the active participation of farmers in technology development and dissemination. In participatory technology development (PTD), it is emphasized that agricultural technologies can only be sustained if they are developed together with the farmers. Likewise, dissemination of agricultural technologies will be effective through spontaneous diffusion by farmers. Box 1 lists the advantages and disadvantages of farmer-led extension.

This approach, which is known as farmer-to-farmer extension, farmer-based extension or farmer-led extension, can be very effective in spreading agricultural technologies. However, one should be careful not to put too

¹ Adapted from Veldhuizen et al. 1997. Farmer-to-Farmer Extension and Training. In Developing Technology with Farmers: A Trainer's Guide for Participatory Learning.



Approaches to farmer-led extension



Box 1

Advantages and disadvantages of farmer-led extension

Advantages

- The farmer-extensionist is familiar with the local characteristics, problems and history.
- He/she speaks the language of the farmers and understands them.
- He/she knows how to motivate neighbors.
- He/she has good contacts and friends within the community.
- People have more trust in someone from the same group who is actually delivering or initiating the technology him/herself.
- Farmer-extensionists are used to manual work and walking long distances.
- The costs of maintaining farmer-extensionists are much lower than those of outsiders.

Disadvantages

- The farmer-extensionists may neglect extension work, as they live where they work and have other responsibilities.
- Some are reluctant to learn from a local person; better-off people may look down on farmer-extensionists as they may be less well-off.
- Frequent trips outside of the area may cause family problems.
- Farmer-extensionists may have difficulties in preparing reports and other paperwork.

Source: Mag-uugmad (1994).

much emphasis on technology. For farmer-led extension to be really effective, the sharing should not be limited to the use of agricultural technologies alone. Emphasis should be given on the sharing of methods and processes of how to innovate and develop promising technologies for sustainable agricultural practices.

Building on local mechanisms for communication

Successful and spontaneous diffusion of technologies occurs frequently when ideas are shared with friends, when seed materials are exchanged and new products gain recognition along trading routes. Local markets or meetings are important venues for sharing agricultural ideas. A great variety of methods - drama, songs, jokes - can carry agricultural messages that may be important locally.



Approaches to farmer-led extension

Such informal communication networks, however, have their limitations. Information is often shared haphazardly if or when opportunity arises. Limited resources may prevent exchange beyond the local neighborhood and gender or other socio-cultural conditions may be equally restricting. The value of information from local channels may also be discredited over the years through heavy emphasis on new ideas spread by formal extension.

Building upon the existing information networks is very useful in sharing the results of farmer-based experimentation. However, there is a need to address some of their limitations. Important elements in such efforts are:

- identification of informal communication and diffusion channels;
- direct "use" of these informal channels, using traditional, village-level social processes (exchange of information at the market place, when fetching water, etc.) and modes of communication (folksongs, storytelling, folkdrama);
- strategically identifying village clusters based on existing communication linkages and working with a limited number of "motor" villages; here the PTD process is initiated to spread later to the whole cluster of villages; and
- direct support to farmer-to-farmer communication and training. Building a farmer-extensionists' network, facilitation of cross-visits and support to the development of farmers' manuals and audiovisuals are among the best-known approaches in this area and are described below.

Farmer-extensionists²

Building a cadre of local extensionists is a logical step in SA programs when potential farmer-trainers emerge from the first generation of farmer-experimenters. They can complement existing institution-based services and be more important in the growing number of areas not reached by

² This section benefits greatly from Selener, et. al. 1997



Approaches to farmer-led extension

- these formal services. Crucial issues to consider in setting up such activities include: formulating the tasks and roles of farmer-extensionists; selection process and criteria; institutional setting and remuneration; appropriate training and support services.

The role of a farmer-extensionist is essentially to share with other farmers in his or her community (or in other villages) the technologies/he/she is successfully adapting/practicing, and to encourage others to experiment in similar ways with these ideas. In practice, his or her role and activities may include much of what is mentioned in Box 2.

To make the selection process of farmer-extensionists a joint process, it is good to develop with (groups of) farmers a list of criteria of what makes a

Box 2

Roles and activities of farmer-extensionists

Towards the community

- Facilitate problem identification
- Provide technical assistance and training
- Look for resources both within and outside the community
- Facilitate experimentation and evaluation
- Look for the necessary information
- Help to plan and organize activities
- Support local leadership in development initiatives
- Facilitate monitoring, evaluation and follow-up of community projects



Towards the support organization

- Participate in planning activities with support organization
- Act as facilitators and guides in training activities and field-trips provided by the organization
- Provide information for progress reports
- Estimate the resources needed for project activities
- Provide links for existing knowledge and resources
- Make staff of support organization aware of the community's real needs
- Coordinate activities with other organizations working within the same community
- Facilitate communication in local language, act as translator
- Act as channel of communication (and interpretation!) between community and support organization(s)

Source: Adopted from Selener et. al. 1997.

Approaches to farmer-led extension



good farmer-extensionists, such as those in Box 3. Of course, such criteria can vary depending on the socio-cultural context and the list should therefore be treated with care. Although some programs start their work almost immediately with the selection of farmer-promoters or farmer-trainers, it is often more effective to do this after one activity or more has been implemented. These activities often lead to the emergence of people with an interest in, and the capacity for, training others. Also at this stage, the farmers and staff from support organizations have started to know each other better and this should enable good communication on the expectations of the farmer-extensionists.

In line with the general PTD approach, communities or farmer groups are the ones who often select the farmer-trainers. The role of PTD practitioners is to raise certain issues and to add criteria for selection, such as recommending the selection of women as farmer-trainers. PTD practitioners may also propose selection procedures to counterbalance the possible over-influence of the local elite. Voting by small groups, rather than by individual farmers, has been suggested in this context (Joel Zwier, 1995, pers. comm.).

Box 3

Qualities of an effective farmer-trainer

- He/she has adopted and successfully established the technology.
- He/she has gone through a process of experimentation on his or her farm.
- He/she is older, respected, and influential.
- He/she is not too caught up with other (e.g. family) responsibilities, or is able to solve possible constraints - in other words, has time.
- He/she is stable (not always traveling) - is available.
- He/she is credible, has good relations with the community.
- He/she shows interests, and has volunteer spirit to take up the role.
- He/she is honest/humble and does not only think of his or her own welfare, has a sense of commitment.
- He/she is willing and capable to train other farmers.

Source: Veldhuizen et. al. 1997.





Approaches to farmer-led extension

- Care should be taken in the selection process to prevent people being chosen not on the basis of their qualities but because of political considerations (e.g., a person may hope to get a paid job). Often, female farmers are not recognized as effective farmer-trainers because socio-cultural norms restrict their mobility. This does not exclude women from functioning effectively as farmer-trainers, more creativity may be needed to organize their selection. This may also be remedied through a dialogue.

The questions to consider in defining the appropriate institutional setting of the farmer-extensionists are:

- Will farmer-trainers receive remuneration for the work they do or is it a solely volunteer work? Often, the first option is chosen to develop more structural solutions. As a rule of thumb, the remuneration should be equal to the wage per day of a laborer, plus traveling expenses. In some programs, the remuneration is twice the going rate for hiring a day-laborer. Who will provide funds for this in the long run?
- To whom are they accountable? to local community structures? a farmer organization? the support organization? The first two options, if available, seem to have the advantage of direct accountability to the people involved. Nevertheless, farmer-extensionists frequently end up becoming part-time NGO staff members. To what extent are these farmer-extensionists accountable to their target groups?
- Are farmer-extensionists expected to work within their own village or to serve outside it? Where the former is the case, they are often volunteers chosen by their community. In the latter case, they are recruited by the support organization either directly or together with the community.
- How many farmer-extensionists are to work in each village? In general it seems best to have as many, with the right experience and qualities, as can be trained and supported. This often leads to a certain specialization among them (e.g., soil conservation next to animal husbandry and/or pest management). The question then arises: who will take care of process-related activities, supporting problem analysis or organizing meetings? Is there a need for a generalist? All these questions are familiar in planning institution-based field extension.

Approaches to farmer-led extension

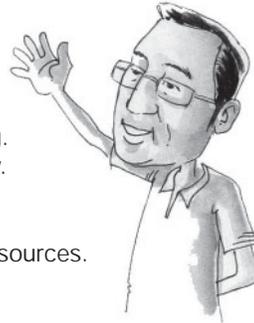


Box 4

Incentives and disincentives for farmer-extensionists

Motivational incentives

- Appropriate salary.
- Allowance for transportation and food.
- Training and field visits to other projects.
- Participation in planning, evaluation and decision-making.
- Recognition of good-quality job from NGO and community.
- Fringe benefits and perks (medical insurance, bonus).
- Visits to his or her project area by outsiders.
- Provision of technical books, pamphlets, etc. and other resources.
- Certificates when attending courses, seminars, etc.
- The replication of his or her work in other communities.
- Respect from extension agents, NGO staff, etc.
- Work with motivated communities.



Disincentives

- Low salaries (they are paid much less than other NGO staff who do the same job).
- Lack of training.
- Lack of promotion or equal opportunity.
- Lack of decision-making power within NGO.
- Lack of responsibility or motivation by the community.
- Unjustified complaints from NGO or community.
- Lack of trust and unrespectful treatment from field staff of NGO.
- Racial and class discrimination.

Source: Selener et. al. 1997.

Finally, adequate training and support services have to be in place. A list prepared by farmer-extensionists in Latin America reveals what motivates or demotivates them in this context.

Cross-visits

Cross-visits or farmer-to-farmer visits is one of the most effective farmer-based methods to extend the process and technology to new farmers and new villages. Different types of cross-visits can be distinguished. One type is to take farmers to a new project site to visit farmers in an established program area to quickly launch the process and technologies



Approaches to farmer-led extension

- in the new area. Another type is village-to-village exchange within the same project area or exchange between farmers in one village. This process encourages sharing of experiences and mutual learning. Usually, visits involve a limited number of farmers (2-6), to enable intensive interactions. In the case of larger groups, enough opportunity should be created for interaction within smaller groups.

A cross-visit aiming to provide motivating information can be relatively short (1 day); specific training is provided later. If the aim is motivation and training, the visit should last 3-5 days to permit "learning by doing" in real conditions by actually practicing the new technologies by working with the host farmer in their fields.

Farmer cross-visits play a number of very important roles, several of which often go unnoticed:

- cross-visits permit farmers to learn new technologies and possible adaptations of these to their own situation;
- they enable farmers to see the result of technologies, which they have not yet used;
- the host farmer gains moral support from sharing his or her experiences;
- long-term linkages between farmers and communities are established, serving as a basis for future agricultural development;
- cross-visits often result in a transfer of new materials such as seeds or examples of new tools and equipment.
- cross-visits expose delegates to the concept of farmer-extensionists and the process of farmer-led experimentation; and
- visits to other areas and exposure to new situations strengthen the self-confidence of delegates, thus, helping to develop local leadership.

The role of the fieldworker in organizing a cross-visit includes the following:

- introduce and discuss the idea of a cross-visit;
- provide help in choosing delegates (the guidelines for selecting effective farmer-extensionists already mentioned also apply for guiding



Approaches to farmer-led extension

communities to choose good delegates, including the maintenance of proper balance in terms of age and gender);

- assist in clarifying objectives, to link the visit with an identified problem or with intended experimentation with a certain technology (is the focus mainly on motivation/information, or on learning/training?);
- facilitate, where necessary, the cross-visits enabling direct farmer-to-farmer interaction (which entails reducing the profile of the inevitable officials), this can be facilitated by specific arrangements such as electing a spokesperson for the group, giving money for transportation to another group member and distributing questions on certain topic areas among delegates in advance;
- encourage and help organize "de-briefing" after the cross-visit to assist delegates in summarizing major points of interest and deciding on a plan of action (e.g., how and what to report back to their respective communities, what can be applied); and
- monitor the results of the visit, following up decisions made after the visit.

Farmer's training and extension materials

Documentation by farmers of their experiences in PTD activities plays a very important role in spreading the ideas. It helps to make these experiences accessible for other villages and areas. The documentation process itself, reflects on and systematically analyzes what has been achieved, thus, enhancing the self-management capacity of farmers. Many opportunities exist such as:

- local means of communication may be used and/or reinforced, songs about successful activities are sung in many villages, in school or at social occasions, drama is also often used (Adoyo, 1994);
- farmer-extensionists may be assisted in producing audiovisual recordings of experiences (taping of farmers discussing the history and results of an experiment, "photonovellas" - regular photo-based journals - are another example developed by the Campesino a Campesino program in Nicaragua);



Approaches to farmer-led extension

- visual results of activities (maps, monitoring sheets, harvest data) may be kept and stored for use in various situations and interactions; and
- experiences may be shared through quarterly farmer-journals or compilation of basic farmer-training materials.

Development and production of the aforementioned media can be done by the farmers or communities themselves, although in certain cases, outside technical expertise will have to be "hired in". Sometimes an outside group may take the lead in developing materials for later use by farmers. In any case, strong interaction with farmers' groups is always required to ensure relevance and user-friendliness of the developed materials.

Whatever the situation, it must be understood that these communication media are used in a different way and play a different role in farmer-led extension, compared to conventional extension approaches. In conventional technology transfer, communication media are meant to assist the extensionist in putting a message across such as transferring information on varieties and practices recommended by scientific research and convince farmers of their advantages so they will use it. In farmer-led extension, communication media assist farmers in analyzing their experiences and sharing them with other farmers. It is the farmer who produces the "message" aiming not to "convince" but to enable other farmers to make adequate decisions and to try things for themselves. The basic differences strongly influences how media are produced and used in a PTD program.

Support to farmer-led extension

Defining adequate support activities is a major challenge to SA programs. The key question is how to support farmers, groups or communities without taking away initiative and sense of ownership? The following aspects need careful consideration:

- facilitation - this frequently mentioned "magic" word encompasses all efforts to stimulate direct farmer-to-farmer interaction, it implies being present and supportive without being the center of attention and only for as long as it is really necessary;



Approaches to farmer-led extension

- encouraging the participation of all - going beyond facilitation, SA practitioners may include on the agenda the participation of the poor, of women or of other specific groups and suggest ways to ensure their involvement;
- training support to farmer-extensionists - this is a regular input in discussing certain technologies, possibilities for and ways of experimentation, moderation and training skills, leadership aspects, community organizing, etc., apart from the training content, the training approach is an important learning opportunity, farmer-extensionists have indicated that exposure to participatory and highly interactive adult education methods strongly influenced the way they work with other farmers;
- support in the development of training and extension materials - this refers to the provision of certain technical skills as well as helping farmers to develop these skills themselves;
- financial support to honorarium - this is needed especially when farmer-extensionists are expected to serve farmers in other villages as their work cannot always be entirely supported by local resources; the extent of and conditions for honorarium support require careful discussion with the farmers (groups) involved;
- provision of critical resources - this may include money for transport, purchase of a simple slide projector or subscription to a relevant local or national journal; and
- monitoring support - this refers to keeping track of the results and impacts of farmer-led extension activities for discussion with the people involved and encouraging evaluative meetings among farmer-extensionists.

The emergence of a cadre of village extensionists and the spread of activities to a greater number of villages has important implications for the role of the SA practitioner. There is an evolution from a frontline facilitator and liaison officer in a few initial villages to an orchestrator of larger processes. He/she will gradually withdraw from the role of an intervening actor in the first-generation communities while the experimenting farmers themselves will have to secure the continuation of the local experimentation process.



Approaches to farmer-led extension

- The initial group of farmers also has to take the responsibility for the diffusion of developed technologies and the experimental process to other villages. In the initial villages, SA practitioners will increasingly become external consultants and supporters of the farmer-extensionists. Consciously managing this shift is a major challenge for field workers in this stage of the process.

An important aspect of the new role of the fieldworker is the careful assessment of technologies that merit further promotion, taking into account their potential for the development of SA. Subsequently, he/she will identify for whom and where these results may be relevant, considering the specific context within which the technologies were developed and related conditions for wider diffusion (socio-cultural, economic and political).



References

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Approaches to farmer-led extension



Attachment 1

Framework for designing a farmer-led extension approach

1. What is the work of the farmer promoters (FPs)?
2. How do FPs do their work?
3. How are they selected?
4. How broad is their expertise (generalist, specialist)?
5. Where do they carry out their work (within own or outside community)?
6. How are they involved time wise (full-time, part-time)?
7. What incentives do they get, if any?
8. What training or other kind of assistance do they receive?
9. Relationship between farmer motivator and extension worker.
10. Issues concerning women farmer promoters.

Factors influencing the design

1. Work philosophy and working style of development organization.
2. Level of work of FP and roles performed in extension program.
3. To whom is the FP accountable?
4. Characteristics of the projects.



Approaches to farmer-led extension

Attachment 2

OHT

Statements/questions for panel discussion

- FPs should be selected by the community.
- FPs should be specialists.
- Volunteer FPs are more committed to the community.
- To make FLE more sustainable FPs should not be paid.
- It is difficult for female farmers to become a good FP.
- FLE and credit does not combine well.
- FPs are more effective than extension workers.
- SA and FLE are a perfect match.



Some insights that can be gained from the panel discussion

- FPs should be demonstrators, setting good example.
- Communities choose, but development organizations can assist in setting up selection procedures.
- FP should be generalist, consistent with SA holistic view and can be trained to acquire more specialist knowledge, if required.
- Volunteers serving the community are effective (assuming they are models in their community). There is a limit though to which their service can be 'demanded'. Percentage of input sales or other work-related incentives seem to work.

Part two

Sustainable agriculture training program development and management

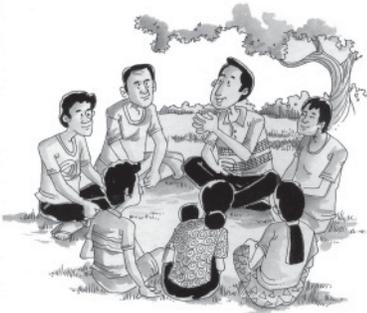
chapter

- 1 Training needs assessment
- 2 Designing SA training programs
- 3 SA training program implementation
- 4 Monitoring and evaluation of SA training program



chapter one

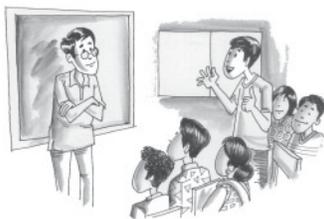
Training needs assessment



● Concepts and framework

● Data gathering tools

● Analyzing data and formulating recommendations





Training needs assessment: Concepts and framework

Duration

2 hours

Description

Training is an important strategy to achieve development goals in SA. Training needs assessment (TNA) is a required process in designing a training program. There are no fixed rules for conducting TNA but there are some tools that can help identify training needs. The key is to examine performance gaps in the context of the organization and community where these are performed.

This session offers a systematic framework to approach TNA for sustainable agriculture. It does not, however, provide a fixed formula to do it. If trainers understand the community and the organization contexts in which to analyze the individual performance gaps, they do not necessarily have to go through all levels described in the framework. The result of the TNA becomes the basis to identify learning elements to be included in future training activities and the type of activities that should be developed. An effective TNA allows facilitators to build upon the experiences and existing knowledge of the participants.

Objectives

At the end of the session, participants should be able to:

- define “needs”, “needs analysis” and “training needs assessment”;
- explain the importance of TNA in developing a SA training program; and
- differentiate the three levels of approaching TNA for SA.



Training needs assessment: Concepts and framework



■ Learning aids and materials

- Hand-out: "Needs Assessment for Sustainable Agriculture Training: Concepts and Framework"
- OHT: "Definitions"
- Charts: "TNA Framework for SA"
"Systematic Approach to Training Program Development and Management"
- Instruction sheet: Key Learnings Ball Game
- Board markers and meta cards

Procedure

Activity 1: Buzz Discussion on Definitions [10 minutes]

1. In pairs, participants discuss how they understand "needs", "needs analysis" and "training needs assessment". These are written on the board for everybody to see. Use the key words participants used in their definitions. Present the definition in the OHT: "Definitions" (see Attachment 1).

Activity 2: Brainstorming on Importance of TNA [30 minutes]

- Using cards, ask the participants to list the importance of conducting training needs assessment. Consolidate the list, drawing out the importance of conducting a systematic TNA.
- Link TNA with other training program development processes by using the chart on "Systematic Approach to Training Program Development and Management" (see Attachment 2).

Training needs assessment: Concepts and framework



Activity 3: Group Discussion on TNA process [1 hour, 20 minutes]

- In two groups, ask participants to discuss the steps they normally undertake in assessing training needs. Ask participants to write these in sequence on a newsprint.
- Draw out from the participants' output key dimensions of TNA. Consolidate this through the "TNA Framework for SA". (see Attachment 3)
- Summarize and wrap-up the session using the "Key Learnings' Ball Game" (see Attachment 4).



Suggested reading materials:

- FAO. 1992. Planning for Effective Training. Food and Agriculture Organization of the United Nations. FAO, Rome, Italy.
- PRIA. 1994. Participatory Training for Rural Development. New Delhi. Society for Participatory Research in Asia.

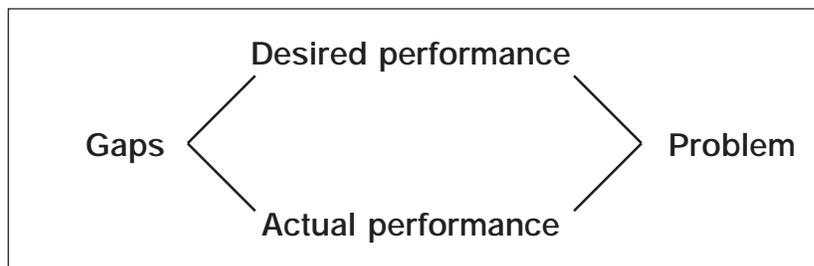


Training needs assessment: Concepts and framework

Needs analysis

A "need" is a deficiency. It is a lack of something recognized as intolerable (FAO, 1992). Some authors refer to it as a deviation from a standard. Training needs assessment (TNA) is the process of identifying training interventions that would address a performance problem. Needs analysis is a narrowing-down process for investigating performance gaps. Two factors affect performance. These are abilities and motivations. In TNA, actual performance is compared against desired performance. The desired performance is defined by the individual's motivation and the organization and/or the community, the context in which performance happens.

The main purpose of doing a needs analysis is to describe the gaps and isolate those factors within the performance environment causing the gaps. Based on this information, one recommends an action which may or may not include training. This may be presented as follows:



Take note that the gap is described as a problem and not necessarily as a "training problem". This implies that not all problems or gaps between the desired and actual performance behavior can be solved by training. For example, no amount of training can change farmers' behavior towards regular use of chemical pesticides if the government would require them to use chemical pesticides as a condition for issuing land ownership certification. Similarly, decrease in harvest yields due to drought cannot be solved by training.



Training needs assessment: Concepts and framework

- Three levels of needs have to be considered for an effective needs assessment for SA training. These are:
 - **Community needs**
This entails an investigation of the bio-physical, social, economic, political and cultural situation of the community. This will help determine the interventions necessary to improve the situation in the target community or improve the situation within the farm.
 - **Organizational needs**
This is seriously considered when the practitioner depends on an organization for decisions and resources in practicing SA. He/she may be the extension officer responsible for training farmers. As such, he/she is guided by mandate, policies, management practices and program or project requirements of the organization. He/she may be a farmer member of a community-based organization (CBO). If as a member of the organization, the farmer totally depends on decisions and resources of the CBO to practice SA, then, his/her performance gap should be investigated in the context of the operations of the CBO. If the organization does not have any direct influence on the farmer's decisions to practice SA, analysis of the organization may be ignored.
 - **Learner or individual needs**
This considers the individual's capability to carry out specific duties effectively and efficiently. Projecting future needs of the learner such as introduction of new machines or new technologies is part of looking at the learners' needs.



Training needs assessment: Concepts and framework



A TNA framework for SA

The framework presented in this hand-out examines the performance gaps of selected individuals within the context of where work performance happens (IIRR, 1995). They can be farmers practicing SA in their respective farms or extension officers promoting SA in the community. Users of this framework should be flexible enough to consider only important entries in the framework that will help them understand performance and non-performance of selected parts of the jobs (see Attachment 3)

The training cycle begins with training needs assessment. TNA ensures that the training program design is based on an understanding of needs and the contexts in which performance gaps happen.



References

- FAO. 1992. Planning for Effective Training. Food and Agriculture Organization of the United Nations. FAO, Rome, Italy.
- IIRR. 1995. International Consultation on Training in Sustainable Agriculture. International Institute of Rural Reconstruction. October 9-19, 1995. IIRR, Silang, Cavite, Philippines.

Training needs assessment: Concepts and framework



Attachment 1

Definitions

Need

A deficiency

A lack of something that is recognized as intolerable.

Needs analysis

A narrowing down process for investigating performance discrepancies.

It studies the discrepancies within the environment in which it is happening (the community, the farm situation, the organization).

It aims to isolate the factors that cause the discrepancy.

Training needs assessment

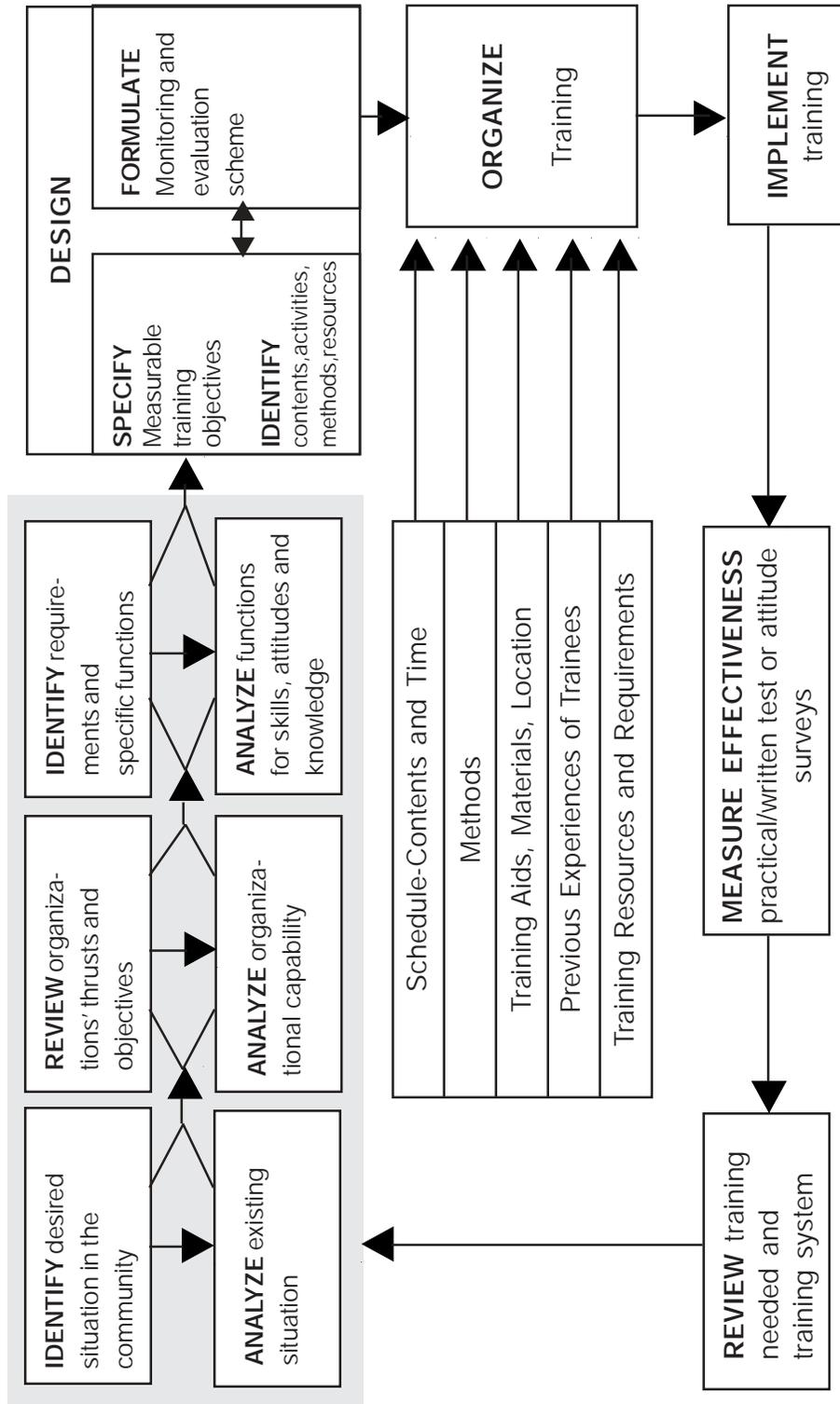
The process of identifying training intervention/s that would address a performance problem.



Poster/
Chart

Attachment 2

Systematic approach to training program development¹
Training needs and analysis



¹ Adapted from Systematic Approach to Training Design, Walton, Ron. EITB, London by Espineli, Marissa B., International Institute of Rural Reconstruction (IIRR)

Training needs assessment: Concepts and framework



Attachment 3

TNA Framework for Sustainable Agriculture

Expected outcome	Information needs*	Methods to gather data	Source/s			
<p>I. Community</p> <p>Profile of the community related to agricultural production practices</p>	<ul style="list-style-type: none"> ■ Biophysical <ul style="list-style-type: none"> - crops - soil - climate - pests ■ Socio-cultural <ul style="list-style-type: none"> - Food preferences - Indigenous practices affecting agriculture ■ Economics <ul style="list-style-type: none"> - Landholding access - Agricultural output - Markets for agricultural products ■ Political <ul style="list-style-type: none"> - Government policies affecting SA - Information about SA 	<ul style="list-style-type: none"> ■ PRA Tools ■ Observations ■ Secondary data ■ Focus group discussion 	<ul style="list-style-type: none"> ■ Community people ■ Extension officer ■ Representative of organizations working in the community ■ Local leaders ■ SA Farmer Practitioners 			
<p>II. Organization</p> <p>Profile of the organization in SA practice/promotion</p>	<ul style="list-style-type: none"> ■ Mandate <ul style="list-style-type: none"> - Vision, mission, goals - Long range/short term/plans - Staff development for SA ■ SA program management <ul style="list-style-type: none"> - Systems/procedures for SA program development and management - Proposal development - Structures and leadership 	<ul style="list-style-type: none"> ■ Document review ■ Interviews ■ SWOT analysis 	<ul style="list-style-type: none"> ■ Reports, plans ■ Managers ■ SA coordinators ■ Extensionists ■ Farmers 			
<p>III. Individual</p> <p>Profile of individuals performing tasks related to promotion or practice of SA.</p>	<table border="0" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 50%; vertical-align: top;"> <p>Extension worker</p> <ul style="list-style-type: none"> ■ Job performance <ul style="list-style-type: none"> - Job description - Performance assessment - Personal characteristics - Abilities/competencies </td> <td style="width: 5%; text-align: center; vertical-align: middle;"> </td> <td style="width: 45%; vertical-align: top;"> <p>Farmer</p> <ul style="list-style-type: none"> ■ Production/ yield <ul style="list-style-type: none"> - Labor - Personal characteristics - Abilities/competencies - SA farm/practices </td> </tr> </table>	<p>Extension worker</p> <ul style="list-style-type: none"> ■ Job performance <ul style="list-style-type: none"> - Job description - Performance assessment - Personal characteristics - Abilities/competencies 		<p>Farmer</p> <ul style="list-style-type: none"> ■ Production/ yield <ul style="list-style-type: none"> - Labor - Personal characteristics - Abilities/competencies - SA farm/practices 	<ul style="list-style-type: none"> ■ Interview ■ Field Visit ■ Document review 	<ul style="list-style-type: none"> ■ Farmer leaders ■ Project coordinator ■ Extensionists ■ Performance appraisal ■ Farm
<p>Extension worker</p> <ul style="list-style-type: none"> ■ Job performance <ul style="list-style-type: none"> - Job description - Performance assessment - Personal characteristics - Abilities/competencies 		<p>Farmer</p> <ul style="list-style-type: none"> ■ Production/ yield <ul style="list-style-type: none"> - Labor - Personal characteristics - Abilities/competencies - SA farm/practices 				

* Sample information only, may be expanded or reduced, depending on needs.



Training needs assessment: Concepts and framework

Attachment 4

Instruction sheet

Key learning ball game

This activity is designed to check the knowledge gained from the session:

1. Write each of the following questions on separate sheets of paper
 - What is a need?
 - In order to understand performance gaps, what are the 3 levels at which performance discrepancies have to be investigated?
 - Not all performance issues can be addressed by training, do you agree or disagree? Why?
 - How does the saying "no training is neutral" apply to sustainable agriculture training?
 - What is training needs analysis?
 - At which level of training needs analysis do we investigate on the profile of the agriculture production system?
 - At which level of TNA do we study the profile of the individual performing tasks related to SA practices?

(You can add more if you have enough time.)

2. Crumple the sheets of paper to form a single ball.
3. Ask the learners to form a circle. The person who drops the ball, peels off one sheet and answers the question written on it.
4. Correct, affirm and add to responses, as appropriate.

Training needs assessment: Data gathering tools



Data Gathering Tools*

Duration

9 hours with a 3-day field practicum

Description

This session focuses on the skills in data gathering and the accompanying behaviors and attitudes necessary to make it successful. The TNA framework in SA presented in the previous session is a useful guide in selecting tools for gathering data.

There are data gathering tools to understand the community, the organization and the individuals as the subject of TNA. Participants are encouraged to use other equally effective tools that they may have used in the past. The quality of needs analysis is defined by the accuracy and relevance of the data gathered. The TNA framework for SA presented earlier ensures that only relevant and important data are collected. Knowledge of various data gathering tools and the skills in using them helps in gathering data accurately.

This session also provides opportunity to practice using selected tools before actually applying them in a 3-day field activity. Data gathering skills and tools presented in this session can also be used in monitoring and evaluation of training programs.



* The same session can be modified to suit discussion on data gathering for monitoring and evaluation.



Training needs assessment: Data gathering tools

■ Objectives

At the end of the session, participants should be able to:

- identify ways to overcome biases and behaviors interfering with the data gathering process in the community;
- differentiate the various tools that can be used to identify training needs in SA at community, organizational and individual levels;
- demonstrate the use of selected TNA tools appropriate for each of the three levels; and
- discuss methodological questions on issues/limitations related to the practical applications of these tools.

Learning aids and materials

- Hand-out: Data gathering tools
- OHTs: "Story of the project", "Venn diagram", "Trendline", "Seasonal pattern", "Transect map", "Resource map", "Gender roles"
- Interview checklist for organizational assessment
- Job analysis sheet
- Task analysis sheet for a farmer
- Competency assessment sheet for SA trainers
- Field study instructions
- Video: "Questions of difference"
- Pens, newsprint, meta cards, round cards in various sizes, masking tapes, scissors, markers, notebook, ballpen



Training needs assessment: Data gathering tools

Procedure

Activity 1: Introduction [30 minutes]

- Present the "Story of the Project" picture (Attachments 1 and 2) to the participants to surface the biases and behaviors interfering with data gathering in the community. Encourage participants to identify ways to address these biases and behaviors that hinder participation.

Activity 2: Interactive discussion on data gathering tools [1 hour]

- Give the participants time to discuss the various tools they have used in data gathering. Summarize by presenting the list of tools that can be used in each of the three needs levels.

Activity 3: Video discussion on the use of data gathering tools [1 hour]

- Present the video presentation on the "Questions of Difference". Invite participants to describe the different tools featured in the video presentation. Encourage discussions among participants on how differently they have used the tools featured in the video.

Activity 4: Practical exercise in using data gathering tools [6 hours and 15 minutes]

- The participants practice using the data gathering tools among themselves in preparation for the field study. These are mostly participatory rural appraisal (PRA) tools (see Attachments 3 to 8).
- The participants practice using tools for organizational and task/job analysis in the attachments. Ensure that the discussion focuses on how the tools are used.
- Check participants' learning progress through an individual exercise where each participant is asked to classify a list of questions according to needs level they try to assess (see Attachment 9).



Training needs assessment: Data gathering tools

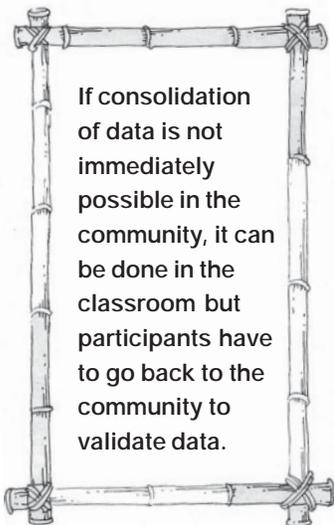
Activity 5: Field work [3 days and 1 hour]

- Orient the participants on the objectives, schedule and expected outcomes of the field application (see Attachment 10). Brief them about the prevailing cultural practices in the community and the organization that works with the people in the community as well as its projects with the villagers.
- Divide participants into groups of 5-7 and assign activity and community facilitators and interpreter/s if necessary. The participants, in groups, visit households or farms and discuss with their respective focus groups. Suggested grouping can be along the lines of the four categories under community analysis of the TNA framework for SA. These are biophysical, economical, political and sociocultural. Using the appropriate PRA tool they collect data from the community on agricultural production practices and patterns.

- Divide participants into two groups. One group collects data about the jobs and tasks performed by farmer including data about the people's organization the farmers are affiliated to. When there is none, organizational analysis is not necessary (see Attachments 11-17).

The other group collects data from the SA promotion extension officer on job and task performance related to SA (see Attachment 18). This group collects data about the GO or NGO that employs the extension officer (see Attachment 11). Find sample questions in the handout.

- Participants present to the community the consolidated data. They facilitate an initial process of prioritizing problems, interventions, crops, etc. They invite the community to ask questions and clarifications.
- Participants prepare documentation of all discussions.



If consolidation of data is not immediately possible in the community, it can be done in the classroom but participants have to go back to the community to validate data.

Training needs assessment: Data gathering tools



Suggested reading materials

Jones, Carolyn. 1995 and 1996. *Compilation on PRA*.
Institute of Development Studies, Sussex, Brighton.

FAO. 1992. *Planning for Effective Training*. Food and Agriculture
Organization of the United Nations. FAO, Rome, Italy.

FAO and IIRR. 1995. *Resource Management for Upland Areas in Southeast Asia: An
Information Kit*. FAO, Bangkok and IIRR, Cavite.

IFAD, ANGOC and IIRR. 2001 *Enhancing Ownership and Sustainability: A Resource
Book on Participation*. International Fund for Agricultural Development (IFAD),
Asian NGO Coalition for Agrarian Reform and Rural Development (ANGOC) and
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Selener, Daniel, et.al. 1999. *Participatory Rural Appraisal: Reference Manual*

Veldhuizen, Laurens van, Ann Waters-Bayer and Henk de Zeeuw. 1997 *Developing
Technology with Farmers: A Trainers' Guide for Participatory Learning*. 1988. Zed
Books Limited, London and New York.





Training needs assessment: Data gathering tools

The data gathering process considers three levels of needs described in the TNA framework for SA training. Described below are data gathering tools for each level.

Data gathering to establish the community profile

The community is where the extension worker performs his/her job. The farm is where farmers practice SA. It is important to visit the geographical area where SA is being practiced and promoted. Such a visit will allow the TNA evaluator to understand the environmental, socio-cultural, economic and political context in which SA is happening.



Participatory rural appraisal (PRA), interviews, observation and questionnaires are commonly used methods and tools to assess the community situation. Others include review of technical reports about the community and media analysis.

This stage of data gathering is also referred to as issue identification phase. Experience shows that some of the common issues in the practice of conventional agriculture include:

- use of pesticides and chemical fertilizer
- water shortage
- deforestation
- population increase
- soil degradation
- gender inequality
- economic feasibility of agricultural practices
- limited access to land



Training needs assessment: Data gathering tools

■ The following steps should be observed in participatory data gathering:

1. List specific problems, issues and concerns of the community. Classify them into economic, political, cultural, biophysical and social problems, issues and concerns to understand them better. Whatever tools are used, the following guidelines are helpful in gathering community information:

- Go to the people's homes and get to know them. Build a climate of friendliness and trust. Do not start by taking a survey. Observe vegetation, soil characteristics, farming enterprise opportunities and crops by visiting farms. Cultural practices affecting farming decisions, indigenous farming practices, social and political issues may be obtained through informal exchanges.



In gathering information, find out what problems people feel are most important or want to solve first. Learn the ideals upon which they base their priorities. Some of the information you will get may not make sense, exert a little gentle probing. Be sure people understand why the information is needed.

- Involve local people in gathering information. Find ways of making the information gathering a learning experience to those involved.
- Prepare guide questions. Some villagers find notetaking by interviewers threatening. Write your notes later.
- Observe people carefully. Match the ways they do things with what is being said.
- Avoid giving advice especially when it concerns their attitudes and habits but when requested, be ready to share experiences related to the interests and concerns of the community. Avoid raising peoples' expectations.



Training needs assessment: Data gathering tools

2. PRA Tools

PRA enables the rural community to participate in planning, implementing, monitoring and evaluating development programs and projects.

PRA is useful for needs assessment in SA in terms of participants' analysis; visualization; land literacy and facilitating behavior and attitude. (Veldhuizen, 1997)

- Participatory analysis - highly interactive methods and tools for working, are foreseen to increase joint undertaking of the local situation, problems and opportunities.
- Visualization - information being creatively displayed in the open for all to see, work with, manage and control.
- Land literacy - methods and tools to support farmers in observing or recording the land and the environment to monitor sustainability; and
- Facilitating behavior and attitudes - refers to these behavior and attitude that encourage participation, openness and collective learning in the community.

There are eight steps in PRA

1. **Site selection** - It is important that after the PRA, either the community or the development organization (GO or NGO) working within the community can take over to make use of the PRA results. A community requesting for PRA or that is recommended by an extension officer is the best for this exercise.
2. **Preliminary visits** - multidisciplinary PRA team meets with village leaders to explore the objectives of the PRA and how this would be useful to the community.
3. **Data collection** - basic data sets useful to assess the agricultural practices should be gathered. These are: spatial data including resource maps and farm sketches, time related data through the time line, social data which can be abstracted through social maps, seasonal calendar, technical and economic data from technical reports.



Training needs assessment: Data gathering tools

- 4. **Data synthesis and analysis** - organize the data to draw problems and opportunities. Problems can be arranged by sectors. Opportunities are discussed and assessed with the people.
5. **Ranking problems** - villagers are invited to identify the problem. PRA team members or the village leader may lead the discussion. The result is a set of problems the villagers agree on and ranked from the most to least severe.
6. **Ranking opportunities** - villagers form a consensus on the most possible opportunities. They agree on the criteria for ranking. It should include stability, sustainability, equity and feasibility.
7. **Adopting a plan to address the key problems identified** - the highest priority solutions are converted to an action plan. The plan should consider activities, time frames and resources.
8. **Implementation** - the best scenario is to see the village leader taking the lead in prioritizing interventions and formulating the plan into action. Other development organizations may help or provide support.

The following are key facilitator behaviors and attitudes when doing PRA:

- Let the people do it. ("Hand over the stick, or pass the pen").
- Encourage innovation/adaptation in the use of methods for structuring discussions. Do not prescribe a specific diagram.
- Observe what is going on around you and discuss.
- Remember that the approach taken is as important as the method.
- Remember that the analysis and discussion of results is as important as the design. Do not rush the process.
- Be aware of your own preconceptions and biases.
- Recognize the importance of local knowledge.
- Honesty and openness are key to facilitation.
- Always show respect for the local people and their opinions.
- Listen to what people have to say about their activities.
- Learn with the people about their livelihood.



Training needs assessment: Data gathering tools

Data gathering to establish the profile of the organization

Designing a training program for SA should carefully consider the general objective of the sponsoring organization, its orientation, direction and thrust. Data from the interview with peers, managers and other colleagues on issues and problems related to the function of the organization are essential inputs. Reviewing project reports reveal a lot of information on future directions and resources that are available to support performance. It is also worth identifying other available strategies for learning SA within the organization such as coaching, staff secondment to a project, team teaching, field visits, etc.

Sample questionnaire to gather information about the organization

1. What is the orientation and existing programs of the organization? How do these support or not support SA?
2. What are the possible contributions of the training being conceptualized to the development and management of SA program/project?
3. What resources, inputs will be needed to develop staff competency for SA training? Is there another way of doing it at a lower cost?
4. What are the factors within the work environment that affect the staff in performing SA related functions?
5. What support is available to the staff in performing their functions?
6. Were expectations communicated to the staff on how they perform their functions?
7. What motivates the person to perform well as SA extensionist or SA farmer practitioner?

Gathering data to establish the profile of prospective learners

In the field of SA, the following are the range of job designations: Technician, Trainer, Extension Worker, Farmer or a combination thereof whichever suits an organization. Each of these consists of a number of specific tasks that people occupying these jobs do. For example, some SA technicians follow selected SA technologies only, whereas some may cover a full range of technologies dealing with crops, livestock, fisheries,



Training needs assessment: Data gathering tools

- agroforestry, etc. If the training is for improvement of job performance, it is important that the job itself be fully understood.

A job consists of tasks. A job analysis involves dissecting the job or a major work unit into its component parts (FAO, 1992), called “tasks”. This allows the trainer to understand what the SA farmer does or other sustainable agriculture worker usually does in the course of their work. Whether we are analyzing the entire job or tasks within the job, we call it job analysis. There are different ways to do this:

- SA experts identify and list critical tasks within the job
- hold meetings with a group of people holding similar jobs (SA farmers or SA extension officers) to identify tasks within the job
- observe job holders and conduct interviews with farmers or extension workers that relate with the job holder
- submit tentative lists of tasks to SA workers or their supervisors to add and/or subtract and/or affirm these tasks



Reference

- FAO. 1992. Planning for Effective Training. Food and Agriculture Organization of the United Nations. FAO, Rome, Italy.
- Veldhuizen, Laurens van, Ann Waters-Bayer and Henk de Zeeuw. 1997 Developing Technology with Farmers: A Trainers' Guide for Participatory Learning. 1988. Zed Books Limited, London and New York.

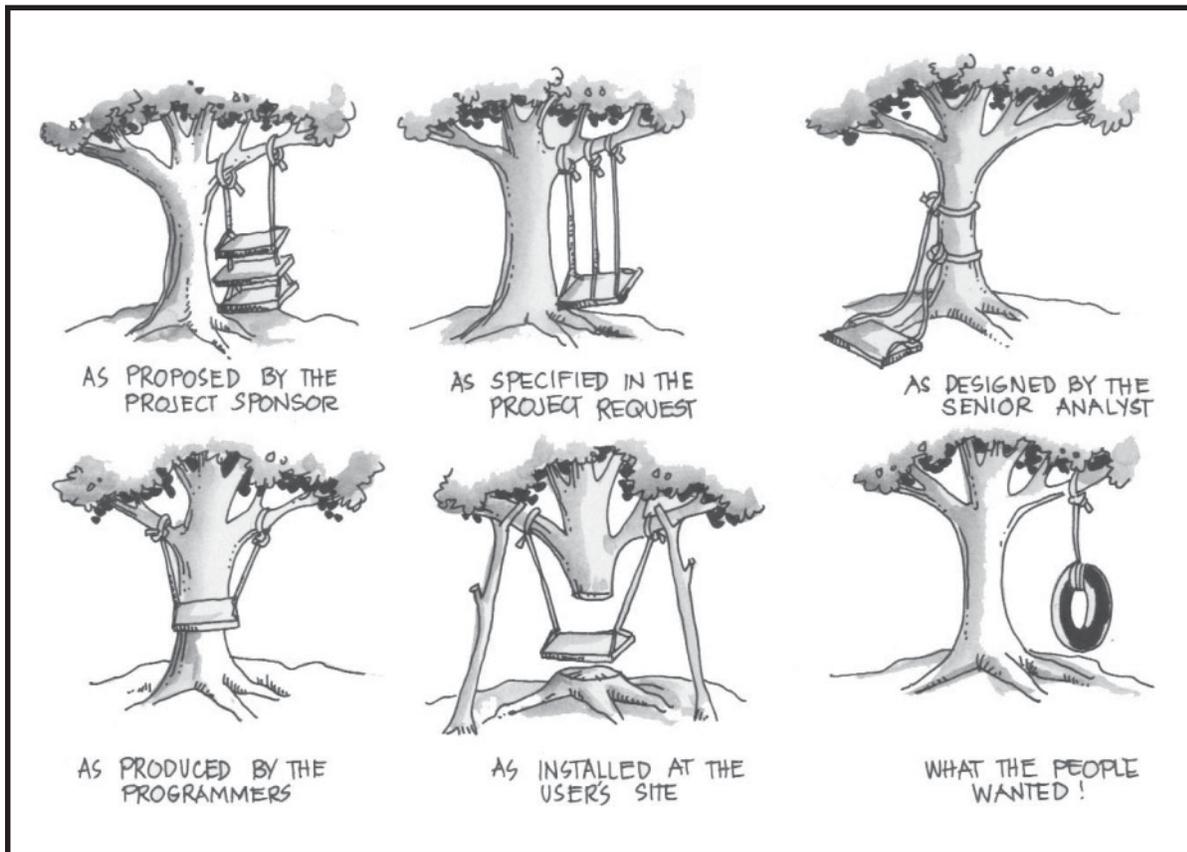
Training needs assessment: Data gathering tools



Attachment 1

OHT

Story of the project





Training needs assessment: Data gathering tools

Attachment 2

Picture analysis

Story of the project

Guide questions

1. What does the project represent?
2. What is the story all about?
3. Identify the attitudes and behaviors of outsiders and/or of the local people which brought about or caused this story to happen?
4. How can these attitudes and behaviors be overcome?

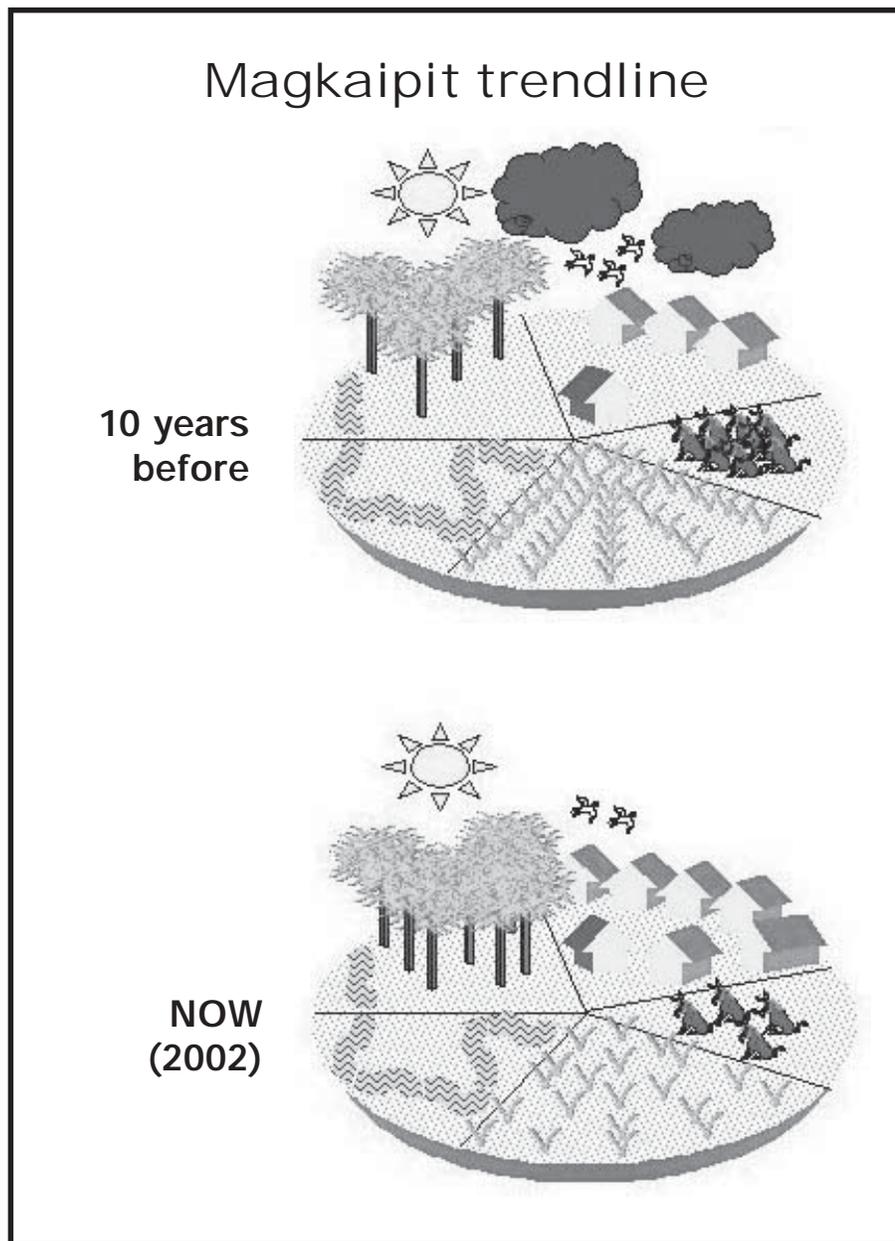
Training needs assessment: Data gathering tools



Attachment 3

OHT

Trendline



Training needs assessment: Data gathering tools

Transect of the Diwata watershed					
<p>Luna</p> <p>ROADS Barangay Road Rough</p> <p>TRANSPORTATION Truck, Jeep, Motorcycle, Horse, Carabao</p> <p>TYPE OF SOIL Clay, Rocky</p> <p>TREES Gmelina, Mahogany, Acacia, Ipi-Ipi, Narra</p> <p>FRUIT TREES Mango, Jackfruit, Calmito, Banana, Atis, Guava, Balimbing, Avocado</p> <p>CROPS Rice, Corn, Gabi, Cassava, Legumes, Coconut, Sweet potato</p> <p>AQUATIC RESOURCES Shrimp, Horo-an, Callisi, Tilapia, Suso, Kuhol</p> <p>ANIMALS Carabao, Cattle, Goat, Pig, Chicken, Duck, Turkey</p> <p>STRUCTURES Day Care Center, Health Center, Plaza, Outpost, Chapel, School, Solar Dryer, Elem. School, Bgy. Hall</p> <p>PROBLEMS Potable water, Lack of school Buildings, Electricity, Roads</p> <p>POSSIBLE SOLUTION Request technical, financial, support from LGU, Regional, and Provincial IIRR support through trainings and seminars</p>	<p>Buenasuerte</p> <p>ROADS Provincial Rough</p> <p>TRANSPORTATION Truck, Jeep, Motorcycle, Horse, Carabao</p> <p>TYPE OF SOIL Clay</p> <p>TREES Gmelina, Mahogany, Acacia, Ipi-Ipi, Molave</p> <p>FRUIT TREES Mango, Langka, Tamarind, Guava, Banana</p> <p>CROPS Rice, Corn, Gabi, Vegetables</p> <p>AQUATIC RESOURCES (None)</p> <p>ANIMALS Carabao, Cattle, Goat, Pig, Chicken</p> <p>STRUCTURES Day Care Center, Health Center, Plaza, Chapel, School, Bgy. Hall, Rice Mill</p> <p>PROBLEMS Water, Electricity, Roads</p> <p>POSSIBLE SOLUTION Support from Local Govt., NGO Political and Provincial</p>	<p>Buenas Aires</p> <p>ROADS Provincial Rough</p> <p>TRANSPORTATION Truck, Jeep, Motorcycle, Horse, Carabao</p> <p>TYPE OF SOIL Clay, Sandy</p> <p>TREES Gmelina, Ipi-Ipi, Acacia, Narra</p> <p>FRUIT TREES Mango, Calmito, Santol, Guava, Avocado, Atis</p> <p>CROPS Rice, Corn, Gabi, Banana, Cassava, Sweet potato</p> <p>AQUATIC RESOURCES Tilapia, Casili, Hari-An, Kuhol, Suso</p> <p>ANIMALS Carabao, Horse, Goat, Pig, Chicken</p> <p>STRUCTURES Day Care Center, Health Center, Plaza, Chapel, School, Bgy. Hall, Rice Mill, Water System</p> <p>PROBLEMS Roads, Bridge, Irrigation</p> <p>POSSIBLE SOLUTION Support financial from local and national, IIRR trainings</p>	<p>Magkaipt</p> <p>ROADS No Road, Trail</p> <p>TRANSPORTATION No means</p> <p>TYPE OF SOIL Clay, Sandy</p> <p>TREES Ipi-Ipi, Bogo, Bangkal, Talisay</p> <p>FRUIT TREES Mango, Calmito, Lanka, Banana, Santol, Balimbing, Avocado, Anonas, Guava</p> <p>CROPS Rice, Corn, Gabi, Cassava, Sweet potato</p> <p>AQUATIC RESOURCES Tilapia, Casili, Hari-An, Kuhol, Suso</p> <p>ANIMALS Carabao, Horse, Goat, Pig, Chicken, Cattle</p> <p>STRUCTURES Roads, Bridge, Irrigation</p> <p>PROBLEMS Day Care Center, Health Center, Chapel, School, Bgy. Hall, Bgy. Site, Roads</p> <p>POSSIBLE SOLUTION Any support from Local and National Government, IIRR</p>	<p>Corbada</p> <p>ROADS National Partly Cemented</p> <p>TRANSPORTATION Truck, Jeep, M. cycle, Tricycle</p> <p>TYPE OF SOIL Clay, Sandy</p> <p>TREES Gmelina, Acacia, Narra, Mahogany, Molave</p> <p>FRUIT TREES Calmito, Mango, Langka, Santol, Atis, Guavano, Balimbing, Avocado, Lemon, Guava, Duhati, Banana, Kolo</p> <p>CROPS Rice, Corn, Gabi, Potato, Peanut, Coconut, Sweet Potato, Ubi</p> <p>AQUATIC RESOURCES Dilis, Burao, Galunggong, Tuna, Hito, Bisugo, Sapsap, Malungino, Pak-an, Bangulis, Salay-salay, Kanuos, Puglia, Kolumbutan, Moblad, Mulmol, Pusti, Tilapia, Rumpi, Lusod, Malagomo, Mamburo, Libud</p> <p>ANIMALS Carabao, Cattle, Goat, Pig, Chicken</p> <p>STRUCTURES Chapel, Bgy. Hall, Waiting Shed, Chapel, Pathway</p> <p>PROBLEMS Bgy. Site, Day Care Center, School, Plaza, Health Center</p> <p>POSSIBLE SOLUTION Request technical and financial support from Municipal, Provincial, Regional, and National offices, IIRR, trainings and seminars</p>	<p>Benitinan/Baybay Dagat</p> <p>ROADS Municipal, Cemented</p> <p>TRANSPORTATION Truck, Jeep, Motorcycle, Boat, Tricycle, Motor Boat</p> <p>TYPE OF SOIL Muddy, Sandy</p> <p>TREES Talisay, Acacia, Ipi-Ipi, Dapdap, Bacawan, Miyape</p> <p>FRUIT TREES Calmito, Indian mango, Kolo, Avocado, Lanka, Banana,</p> <p>CROPS Cassava, Sweet Potato, Banana</p> <p>AQUATIC RESOURCES Balangawon, Bisugo, Tangui, Mamsa, Tulingan, Bulinao, Burao, Sibugbug, Hito, Sapsap, Tabodjos, Silab, Miransing, Pating, Baraka, Puluhan, Boto-boto, Malimmo, Pagui, Matang Baka, Bangus, Pusti, Hipon, Sahang, Galunggong</p> <p>ANIMALS Pig, Chicken, Duck, Turkey</p> <p>STRUCTURES Bgy. Hall, School, Market, Pler, Seawall Plaza, Concrete Roads</p> <p>PROBLEMS Potable water, Health and Nutrition Center</p> <p>POSSIBLE SOLUTION Request technical, financial, Support from Local and National Government, Request any assistance from NGO's and other political affiliations</p>



Resource map

Barangay Magkaipit



Roads	No road, trail
Transportation	No means
Type of soil	Clay, sandy
Trees	Ipil-ipil, bogo, bangkal, talisay
Fruit trees	Mango, caimito, langka, banana, santol, balimbing, avocado, anonas, guava
Crops	Rice, corn, gabi, cassava, sweet potato
Aquatic resources	Tilapia, casili, haro-an, kuhol, suso
Animals	Carabao, pig, horse, cattle, goat, chicken
Structures	Plaza
Problems	Health center, day care center, barangay hall, roads, barangay site, school, chapel
Possible solution	Any support from national, local government and IIRR

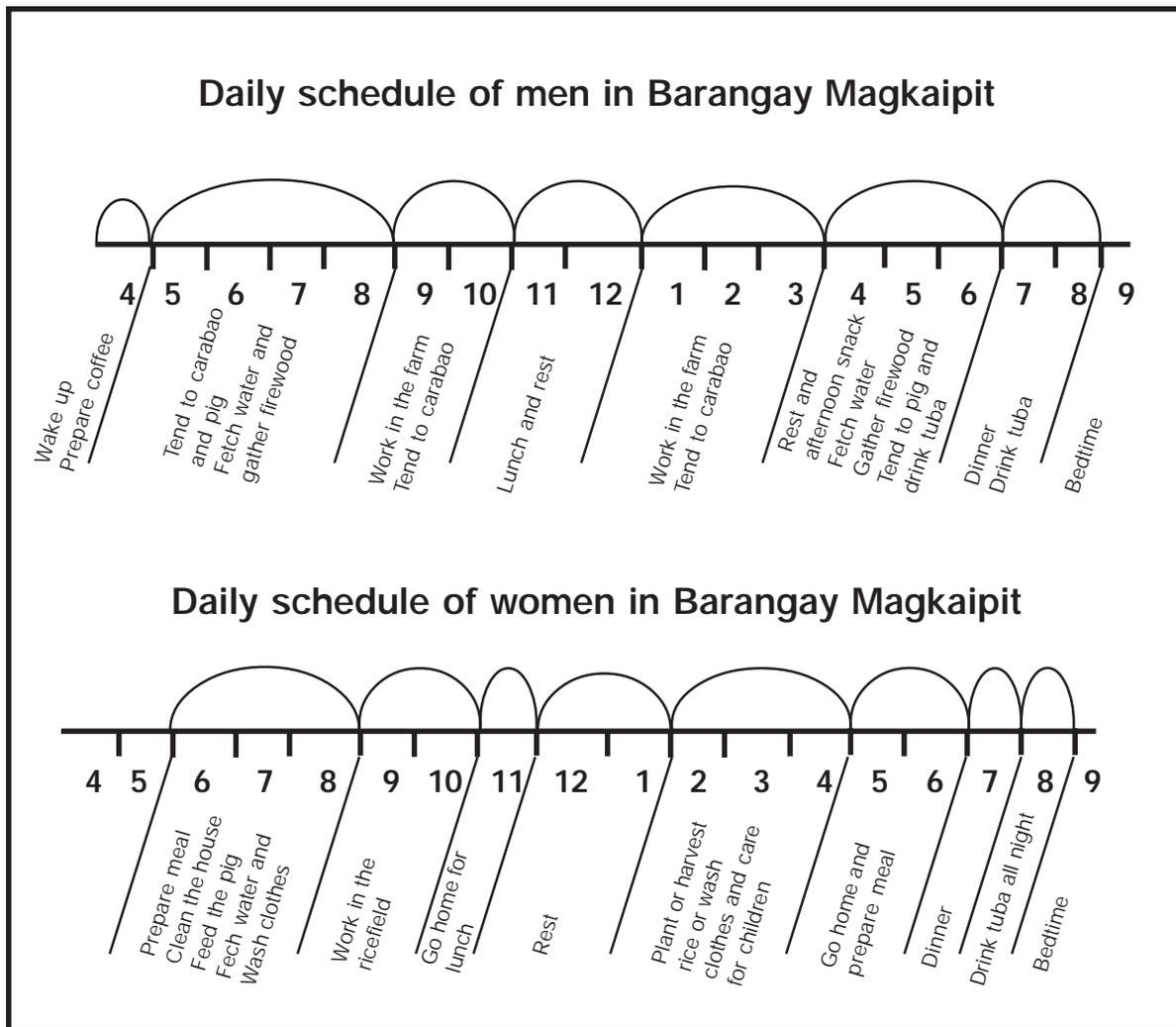
Training needs assessment: Data gathering tools



Attachment 7

OHT

Gender roles



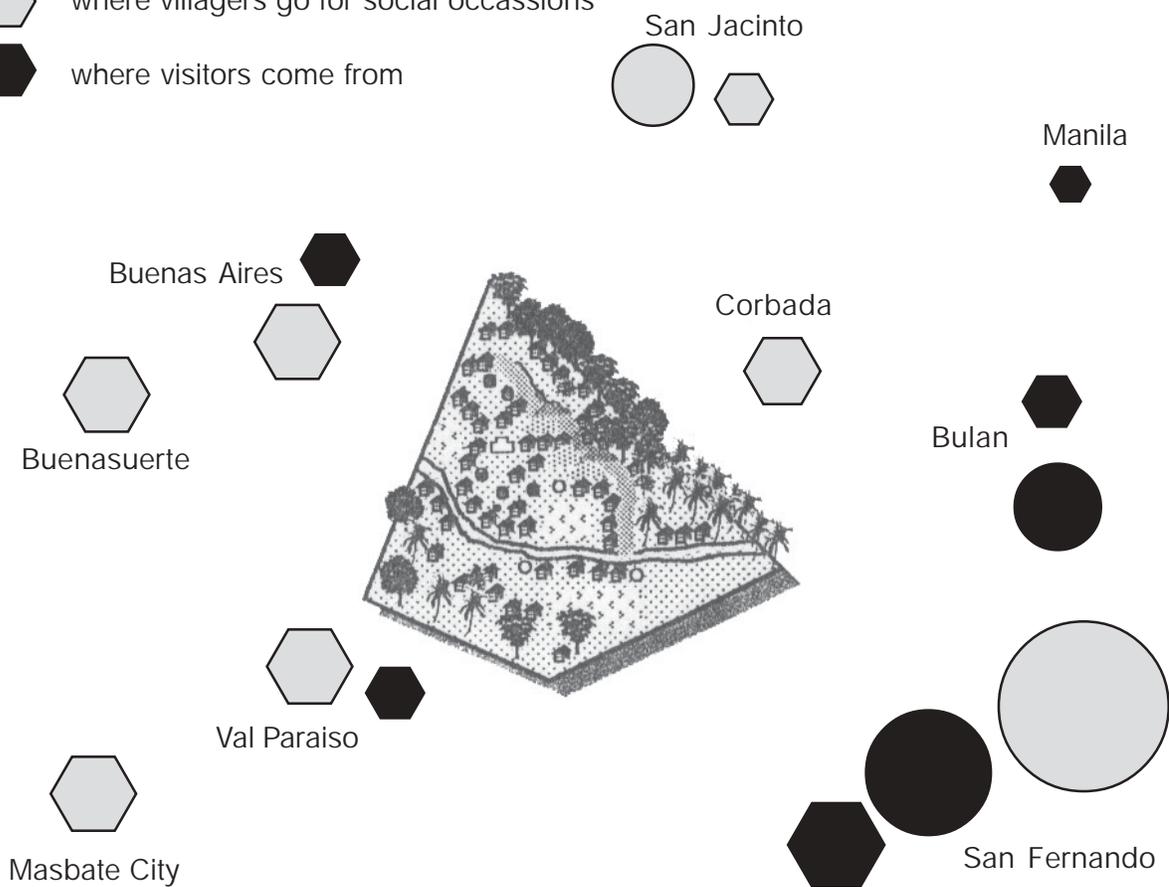
Training needs assessment: Data gathering tools



Venn diagram of relational mapping of Barangay Magkaipit

Legend:

-  where services come from
-  where goods come from
-  where villagers go for social occasions
-  where visitors come from



Training needs assessment: Data gathering tools



Attachment 9

Individual exercise

The following list of questions would be used in a TNA interview. Classify what level of needs these questions try to assess by writing C (community need), O (organization need), I (individual need) in the space provided.

- _____ 1. What are the goals of the agriculture program in which the extension officer is involved?
- _____ 2. Which of the tasks of the extension officer are dependent on guidance provided by his/her supervisor?
- _____ 3. Which of the tasks of the extension officer have to be completed everyday?
- _____ 4. What crops are grown in the community? Why is there a preference for these crops?
- _____ 5. What support is available from the organization to help the extension officer provide support to farmers in their agricultural production activities?
- _____ 6. What new related programs will the organization get into in the next five years?
- _____ 7. What resources are available to the farmers in the community?
- _____ 8. What policies in the organization limit the agricultural extensionist to participate in making decisions about the program?
- _____ 9. How do the extensionists view their role in the technology development process?
- _____ 10. Which function does the extension officer perform well?
- _____ 11. What technologies are often suggested by extensionists to the farmer?
- _____ 12. How often does the extensionist visit the farmers' field?
- _____ 13. What organizations within the community help the farmers in their agricultural production activities?
- _____ 14. How is the supervisor informed of what is going on in the community?
- _____ 15. How well is the extensionist able to communicate the information from the field to his/her supervisor?



Training needs assessment: Data gathering tools

Attachment 10

TNA practicum

(Sample)

I. Objectives

At the end of the activity, the participants will be able to apply selected TNA methods and/or tools in SA at a given village.

II. Description

This activity is designed to provide an opportunity for SAToT participants to practice TNA at the field level with the use of selected methods and/or tools.

The participants will be divided into 3 to 5 groups to do PRA with the villagers in Ban Don Jieng.

In addition to the above-mentioned assignment. The participants will be tasked to interview Farmer Promoters/s and farmer leader from the SA pilot project, "The Pilot Project for the Development of SA of Farmers".

III. Date, day, place, and schedule

July 8 (Monday)

- | | | |
|---------------------------------------|---|--|
| 8:00 a.m. - 3:30 p.m.
(with Break) | - | Orientation on the mechanics of the TNA practicum |
| the | - | Preparation for orientation - interaction with the representatives from farmers federation and local organization |
| 3:30 - 5:00 p.m. | - | Orientation, interaction with the representatives of the federation (Farmer Promoters) and the local organization of farmers |

July 9 (Tuesday)

- | | | |
|-------------------|---|---|
| 8:00 - 9:00 a.m. | - | Travelling |
| 9:00 - 9:30 a.m. | - | Welcome and introduction of the participants and village leader |
| 9:30 - 12:00 nn | - | Sub-groupings |
| 12:00 - 1:00 p.m. | - | Data gathering in small groups |
| 1:00 - 4:00 p.m. | - | LUNCH BREAK |
| 4:00 - 5:00 p.m. | - | Continuation of data gathering |
| 5:00 - 7:00 p.m. | - | travel back to the hotel |
| 7:00 - 8:00 p.m. | - | REST |
| 8:00 - 9:00 p.m. | - | DINNER |
| | - | Organizing the data gathered in small groups, reflection evaluation |

Training needs assessment: Data gathering tools



Attachment 10 . . . continued

July 10 (Wednesday)

- 8:00 - 10:00 a.m. - Continuation of data organization and preparation for presentation (at the hotel)
- 10:00 - 10:15 a.m. - BREAK
- 10:15 - 11:00 a.m. - TRAVELLING
- 11:00 - 12:00 nn - Validation with the whole group of villagers
- 12:00 - 1:00 p.m. - LUNCH BRREAK
- 1:00 - 2:00 p.m. - Travelling back to the hotel
- 2:00 - 3:30 p.m. - REST/SNACKS
- 3:30 - 7:00 p.m. - Refining/revising the data based on the results of the validation; start analyzing the data

July 11 (Thursday)

- 8:00 - 12:00 nn - Continue analyzing TNA results and formulating recommendation
- 12:00 - 1:30 p.m. - LUNCH BREAK
- 1:30 - 3:00 p.m. - Preparation of the TNA Report
- 3:00 - 3:30 p.m. - BREAK
- 3:30 - 4: 30 p.m. - Presentation and validation of the TNA Report with the representatives of the federation and the local organization of farmers.
- 4:30 - 7:00 p.m. - Finalization of the TNA Report based on the results of the validation



Training needs assessment: Data gathering tools

Attachment 11

Interview checklist for organizational assessment

1. Organization Vision, Mission and Values
 - How do the Vision, Mission and Values of the organization support/not support SA development and practice?
 - Do the VMV reflect respect for farmers' indigenous knowledge and capacity to address agricultural issues confronting them?
 - Do they give importance to participatory approaches to rural development? Do they support the concept of sustainability in the practice of agriculture?
2. Sustainable Agriculture Program
 - What are the various programs of the organization? How do these support/not support SA?
 - What are the available technical expertise to support SA?
 - How is training used to advance the program goals of its sustainable agriculture program?
 - How much resources and inputs will be needed to develop staff competency for SA training? Are there other ways of doing it at less cost?
3. Organizational Culture
 - What are the factors within the work environment that affect the staff in performing his/her SA related functions?
 - What support is available to the staff in performing his/her functions related to SA?
 - What expectations related to SA have been communicated to the staff?
 - How were these expectations communicated?
 - What were the staff's motivation for advancing SA in the organization?

Please add more relevant questions. The idea is for you to find out why, how, what, when, where and for whom is the sustainable agriculture program of the organization, including why it works and does not work.

Training needs assessment: Data gathering tools



Attachment 12

Job analysis worksheet¹ (blank)

Job Analysis Worksheet					
Job: _____					
Task	Frequency of performance (A)	Importance (B)	Learning difficulty (C)	Total	Focus
Legends:					
(A) 1 = Seldom 2 = Ocassional 3 = Weekly to monthly 4 = Daily to weekly 5 = Daily		(B) 1 = Marginally important 2 = Moderately important 3 = Extremely important		(C) 1 = Easy 2 = Moderately difficult 3 = Very difficult 4 = Extremely difficult	

¹ FAO, 1992



Training needs assessment: Data gathering tools

Attachment 13

Job analysis worksheet¹ (Completed)

Job: <u>Rice farmer</u>					
Task	Frequency performance (A)	Importance (B)	Learning difficulty (C)	Total	Focus
Land preparation	2	2	2	6	
Selection of seeds	2	2	1	5	
Nursery preparation	2	2	2	6	
Sowing	2	3	1	6	
Nursery maintenance	4	2	1	7	
Transplanting	2	3	1	6	
Water management	5	2	3	10	YES
Fertilizing	3	3	3	9	YES
Weeding	3	2	1	6	
Pest and disease control	4	3	4	11	YES
Harvesting/processing	1	3	2	6	
Legends:					
(A)		(B)	(C)		
1 = Seldom		1 = Marginally important	1 = Easy		
2 = Occasional		2 = Moderately important	2 = Moderately difficult		
3 = Weekly to monthly		3 = Extremely important	3 = Very difficult		
4 = Daily to weekly			4 = Extremely difficult		
5 = Daily					

¹ FAO, 1992

Training needs assessment: Data gathering tools



Attachment 14

Task analysis worksheet¹ (Blank)

Task Analysis Worksheet (Blank)																						
Job :																						
Task:																						
Steps/Components	Frequency of performance	Importance	Learning difficulty	Total																		
<p>Legends:</p> <table style="width: 100%; border: none;"> <tr> <td style="width: 33%;">(A)</td> <td style="width: 33%;">(B)</td> <td style="width: 33%;">(C)</td> </tr> <tr> <td>1 = Seldom</td> <td>1 = Marginally important</td> <td>1 = Easy</td> </tr> <tr> <td>2 = Occasional</td> <td>2 = Moderately important/</td> <td>2 = Moderately difficult</td> </tr> <tr> <td>3 = weekly to monthly</td> <td>3 = Extremely important</td> <td>3 = Very difficult</td> </tr> <tr> <td>4 = Daily to weekly</td> <td></td> <td>4 = Extremely difficult</td> </tr> <tr> <td>5 = Daily</td> <td></td> <td></td> </tr> </table>					(A)	(B)	(C)	1 = Seldom	1 = Marginally important	1 = Easy	2 = Occasional	2 = Moderately important/	2 = Moderately difficult	3 = weekly to monthly	3 = Extremely important	3 = Very difficult	4 = Daily to weekly		4 = Extremely difficult	5 = Daily		
(A)	(B)	(C)																				
1 = Seldom	1 = Marginally important	1 = Easy																				
2 = Occasional	2 = Moderately important/	2 = Moderately difficult																				
3 = weekly to monthly	3 = Extremely important	3 = Very difficult																				
4 = Daily to weekly		4 = Extremely difficult																				
5 = Daily																						

¹ FAO, 1992



Training needs assessment: Data gathering tools

Attachment 15

Task analysis worksheet¹			
(Completed)			
Job : Rice farmer			
Task: Fertilizing			
List steps and components	Proficiency rating 1 2 3 4 5 (see legend below)	Check this box if proficiency is a problem	Can the problem be addressed by training? If so, check box
Collect soil samples for analysis.	1 2 3 4 5	[✓]	[✓]
Identify types of basal fertilizers for soil.	1 2 3 4 5	[]	[]
Identify amount of fertilizers required for soil.	1 2 3 4 5	[✓]	[✓]
Identify nutrient deficiency symptoms in plants.	1 2 3 4 5	[✓]	[✓]
Identify types of fertilizers required by plants.	1 2 3 4 5	[]	[]
Determine amount of fertilizers required by plants.	1 2 3 4 5	[✓]	[✓]
Determine time of application.	1 2 3 4 5	[]	[]
Obtain fertilizers at appropriate time.	1 2 3 4 5	[✓]	[NO]
Apply fertilizers.	1 2 3 4 5	[]	[]
Legend:			
1 = Cannot complete any part of the task			
2 = Can complete less than half of the task			
3 = Can complete more than half but less than total			
4 = Can complete entire task, but takes too long			
5 = Can complete the task within the time standard			

¹ FAO, 1992



Training needs assessment: Data gathering tools

Attachment 17

Gap analysis worksheet² (Completed)

Job : Rice farmer Task: Fertilizing			
List steps and components	Proficiency rating 12345 (see legend below)	Check this box if proficiency is a problem	Can the problem be addressed by training? If so, check box
Collect soil samples for analysis.	1②3 4 5	[✓]	[✓]
Identify types of basal fertilizers for soil.	1 2 3④5	[]	[]
Identify amount of fertilizers required for soil.	1 2 3 4⑤	[]	[]
Identify nutrient deficiency symptoms in plants.	1 2 3④5	[✓]	[✓]
Identify types of fertilizers required by plants.	1 2 3④5	[]	[]
Determine amount of fertilizers required by plants.	1 2③4 5	[]	[]
Determine time of application.	1②3 4 5	[✓]	[]
Obtain fertilizers at appropriate time.	①2 3 4 5	[]	[]
Apply fertilizers.	①2 3 4 5	[✓]	[✓]
Legend:			
1 = Cannot complete any part of the task			
2 = Can complete less than half of the task			
3 = Can complete more than half but less than total			
4 = Can complete entire task, but takes too long			
5 = Can complete the task within the time standard			

² FAO, 1992

Training needs assessment: Data gathering tools



Attachment 18

Sustainable Agriculture Trainer Assessment List

Introduction:

1. Please rate your confidence level in performing the knowledge, skills and attitudes (KSA) of SA trainer listed below.
2. Check the number which corresponding to your level of confidence to perform SA training skills to share SA knowledge and to exhibit desired attitudes (1 - low; 5 - high).

If there are skills, knowledge or attitudes that you feel are important but are not listed below, please add them to the list. Follow steps 1 and 2 in rating them.

Importance					Knowledge, Skills and Attitudes of SA Trainers	Degree of Confidence				
1	2	3	4	5		1	2	3	4	5
					Training Needs Assessment					
					1. Explain TNA concepts, principles, tools and techniques.					
					2. Collect, gather data for TNA					
					3. Analyze the community situation					
					4. Use PRA tools and techniques for TNA					
					5. Analyze the organization's SA programs, mandate					
					6. Task analysis					
					7. Prepare TNA report					
					8. Others					
					Design Training Activity					
					1. Formulate training objectives					
					2. Explain SA concepts, principles and values					
					3. Identify the content of an SA training activity					
					4. Develop the schedule					
					5. Identify the resources needed					
					6. Share current trends in SA practice					
					7. Articulate adult learning principles					
					8. Articulate participatory training concept and principles					
					9. Explain the gender issues in SA training					
					10. Explain the importance of participatory technology development and dissemination principles					
					11. Identify the appropriate training strategies and methods for SA training					
					12. Logical sequencing of topics					
					13. Selection and use of participatory methods					
					14. Selection of appropriate learning strategies for SA					



Training needs assessment: Data gathering tools

Attachment 18 . . . continued

Importance					Knowledge, Skills and Attitudes of SA Trainers	Degree of Confidence				
1	2	3	4	5		1	2	3	4	5
					Training materials preparation and collection					
					1. Select appropriate training materials					
					2. Simplify existing/available materials					
					3. Develop handouts, illustrations and visual aids					
					4. Use the overhead projector					
					5. Use flipcharts and posters					
					6. Prepare computers, generate visual aids					
					7. Others					
					Conduct the training					
					1. Introduce concepts					
					2. Facilitate the learning process					
					3. Level expectations					
					4. Use methods and materials					
					5. Motivate learners					
					6. Summary and wrap-up					
					7. Others					
					Critical attitudes					
					1. Patience in handling the learning process					
					2. Give importance to accuracy of data/information					
					3. Tactfulness during interaction					
					4. Openness in receiving and giving ideas					
					5. Creativity in presenting lessons					
					6. Concern for the learner					
					7. Emphasize participation in the learning process					
					8. Cultural sensitivity					
					9. Others					



Training needs assessment: Analyzing data and formulating recommendations

Duration

6 hours

Description

Analyzing TNA results allows managers to prioritize knowledge, skills and attitude (KSA) performance gaps. It provides options in addressing performance gaps in the context of the community's situation and the realities of the organization in which performance happens. This session provides participants tools to make sense of the data gathered at the community, organization and individual levels. Based on the analysis, recommendations are formulated on how to address priority training needs of the target group.



Objectives

At the end of the session, participants should be able to:

- rank the KSA gaps in the farmers' practice of SA and the extension agents' ability to promote SA;
- compare possible options to address the identified KSA gaps of these learners; and
- recommend a training program that would address the needs of these groups of learners. Recommendations should carefully consider opportunities available in the community or organizations and the cost of the training intervention.



Training needs assessment: Analyzing data and formulating recommendations

■ Learning aids and materials

- Data collected during the field study (group output)
- Hand-out: Analyzing data and formulating recommendations
- OHTs: "Issue categorization", "Force-field analysis", "Feasibility analysis", "TNA report: Suggested format", "Levels of analysis in TNA", "Analyzing SA strategies in use", "Intervention analysis framework"
- Calculator
- Newsprints, permanent markers, adhesive

Procedure

In this session, the focus of performance gap analysis are farmers who are planning to start SA farming or those who are already practicing SA and extension agents that promote SA in the community or with selected farmers in the community.

Activity 1: Review of the levels of analysis in TNA

1. Present the different levels of analysis in TNA (see Attachment 1). Review with the participants the various data collected that serve as inputs to the various analysis.

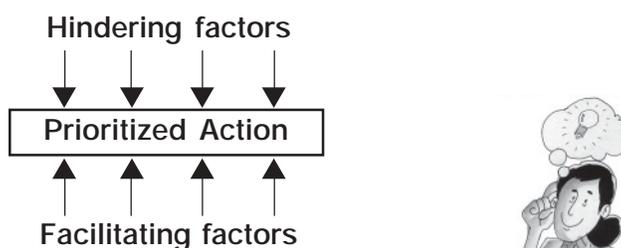
Activity 2: Field exercise on analyzing data about the community [1 hour]

1. Assign one of the participants to review with the community the comments, specific problems, issues and concerns that came up from the data gathering exercises.
2. The same person may facilitate prioritization of problems and issues based on the criteria identified with the community. This may include:
 - people's capability to solve them
 - their incidence (how widespread the problem is or number of people affected); and



Training needs assessment: Analyzing data and formulating recommendations

- urgency (need to respond immediately, non-response would lead to more problems)
3. Assigned participant facilitates review of each problem and assesses the possibility of resolving them through the use of training. Proceed further using the intervention analysis framework (see Attachment 2).
 4. Community people must be able to narrow down the first prioritized problems for actions. Facilitator can help by using force field analysis to identify the possible actions/interventions. See illustrations below.



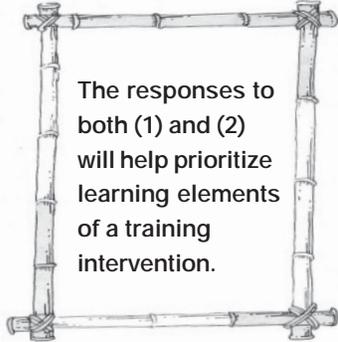
In most cases, the community would already have leaders that are capable of facilitating their problems. If this is so, let local leaders facilitate the process.

Activity 3: Group work on analyzing data about the organization [1 hour]

1. Divide participants into two groups. One group will analyze data from the people's organization the farmer work with. The other group will analyze the data from the NGO or government agency employing the extension worker.
2. Identify the organization's strengths, weaknesses, opportunities and threats at present in relation to the promotion and practice of SA (see Attachment 4).
3. Check whether existing strategies for advancing SA in the organization are built upon strengths and weaknesses in responding to the opportunities and challenges presented by the environment.
4. Identify elements within the organization that are supportive or non-supportive of SA practices/problems.



Training needs assessment: Analyzing data and formulating recommendations



The responses to both (1) and (2) will help prioritize learning elements of a training intervention.

Activity 4: Group work on analyzing data about the performance of individuals [1 hour]

1. Using the same grouping in Activity 2, ask the participants to identify the critical tasks of the SA farmers' job or the extension officer's job. Critical tasks are those that define the quality of results/outputs.
2. Compare the responses on the complexity of the job by computing the averages and means of quantitative responses collected from the job, task and gap analysis worksheets. This will help identify learner's areas of competence and incompetence.

Activity 5: Group work on analyzing information from the community, organization and individuals together [1 hour]

1. Following similar grouping above, identify the causes of the individual's performance gaps. If the causes of these gaps can be solved by organizational and community interventions rather than training, identify what these interventions are. Refer back to the result of your intervention analysis in Attachment 2.
2. Focus on gaps that can be addressed by training. Identify opportunities within the organization and/or community that can help develop and implement the training. Identify internal experts on the subject matter, work opportunities, experiences and projects/sites that can be used for learning purposes. Afterwards, identify gaps in developing and managing the training interventions that should be addressed through external resources. This should be the main source of information of the TNA report.

Activity 6: Group work on analyzing the feasibility of the recommended training interventions [1 hour]

1. From the list of options generated from the previous exercises, analyze their feasibility based on factors important to the organization (see Attachment 5).



Training needs assessment: Analyzing data and formulating recommendations

2. In this exercise, cost is one factor given priority. Make a rough estimate of the cost of each options. Indicate how many people will benefit directly from each interventions.
 - In doing all these estimates, consider resources that are already available in-house.
 - Given the cost estimates and the expected outcomes from each intervention, prioritize the feasibility of your options.

Activity 7: Workshop on Preparing the TNA Report [1 hour]

- Continuing with the same grouping, ask participants to write recommendations in the newsprint based on the suggested format for writing TNA results or any new format that the group agrees upon. Share this with the other group. (see Attachment 6)
- Review the outputs with the participants. Ask clarifications. Point out gaps and/or the strong points in the analysis.
- Draw from participants key points in the analysis of the TNA results. Summarize areas of improvements in the draft TNA report.



Training needs assessment: Analyzing data and formulating recommendations

At this stage, learners should have gathered data from the community, organization and individuals who are the focus of the needs assessment process. The challenge is how to make sense of the gathered data.



Organizing and analyzing information follows the following steps

Action	Methods	Purpose
1. Probe	4 W's (Who, what, where, why)	<ul style="list-style-type: none"> complete information, fill up gaps
2. Validate	focused group discussions, triangulate, extrapolate	<ul style="list-style-type: none"> check accuracy of information
3. Establish categories/trend	categorization of issue, space or trend, strengths, weaknesses, opportunities, threats (SWOT), linkage diagram, problem tree, area concentration; sorting	<ul style="list-style-type: none"> prioritize issues and opportunities, identify significant concerns come up with a range of solutions and concerns identify enabling factors for effective action

Level of Analysis in TNA

A. Analyzing data about the community

The PRA tools, interviews with people in the community and observation of people's social practices and on-farm techniques generated a lot of data about the community and its people. There are different ways of handling this data depending on objectives.



Training needs assessment: Analyzing data and formulating recommendations

1. SWOT Analysis

SWOT allows for listing the strengths, weaknesses, opportunities and threats on sustainable agriculture practice within the community. It helps the facilitator make the community recognize their strengths, weaknesses, opportunities and threats.

2. Resource Analysis

Listing of resources available within and outside the community. It also helps in identifying resource gaps to support sustainable agriculture practices.

3. Community profile

Data can be categorized as bio-physical, socio-cultural, economic and political. These categories help in describing the community. It should be linked to the community SWOT analysis.

B. Analyzing data about the organization

The main objective of this level of data analysis is to find out the conditions within the organizations that are supportive and non-supportive of SA. The data gathered should be able to show consistencies/inconsistencies among the various elements of the organizations that are supportive/non-supportive of SA practices.

1. List of systems, processes, elements within the organization supportive/non-supportive of SA practices.

Going through all responses made to questionnaire related to organizational assessment, a list of systems, processes or elements that are supportive or non-supportive of SA practices can be generated. It will be good to analyze these data against organizational mandate and politics.

2. SWOT analysis

This tool can be also used to identify the strength, weaknesses, opportunities and threats within the organization. It helps in identifying possible strategies for continued practice of SA (refer to Attachment 4 in the tool).



Training needs assessment: Analyzing data and formulating recommendations

C. Analyzing data about the performance of the individual or groups

This level of analysis focuses on an individual or the different individuals within the group performing various tasks within the job. This is where averages of the scores in the job, tasks and gap analyses would be important to review.

1. Gap analysis

Information and averages helps the evaluator to identify important tasks within the job and which of the tasks are considered to continue to be a challenge on the job holder (FAO, 1992).

D. Analyzing information from the community, organization and individual.

At some point, all data gathered from three levels has to be reviewed in totality. A realistic review of the data will help in seeing the performance gaps of the individual or the group in the context of the community or organizational realities.

1. Intervention analysis

The intervention analysis framework (Attachment 2) offers a systematic process of identifying options to address the performance gap. It allows for listing possibilities for training and non-training intervention.

2. Force field analysis

The force field analysis tool helps in identifying hindering and facilitating factors to put the desired/prioritized intervention into action (see Attachment 3).

E. Analyzing feasibility of the recommended training interventions

This focuses on training intervention/s identified to address the performance gaps. Here, the feasibility of various interventions are analyzed using the criteria agreed with key stakeholders. Some of these criteria may include: cost, long term/short term impact, benefits, availability of relevant resources, time and all other factors considered important to the individual/s, organization and community.



Training needs assessment: Analyzing data and formulating recommendations

1. Feasibility analysis

This tool is designed to study the training options that would be able to address a performance gap. One can add more columns to the proposed tool depending on the criteria for feasibility agreed upon.

Preparing the TNA report

All the information from all the analyses made are inputs to the TNA report. There is no one way of writing a TNA report. The TNA report describes the needs assessment undertaken, why it was done and the various tools and techniques used to gather data. It shows the results along with recommended training intervention or series of training interventions. A TNA report also provides guidance to the decision-makers of the organization on whether to pursue or not a training intervention.

Below is a suggested format for a TNA report:

Training needs assessment report

(Suggested format)

I. Rationale

A paragraph that describes the situation that called for the TNA. It explains the main purpose of the training needs analysis.

II. Description and scope

This discusses the nature, coverage and emphasis of the TNA. This includes a description of the individual, organization and the community covered by the needs assessment.

III. Objectives of the TNA

This lists the specific objectives of TNA. The formulation of these objectives follows the principle of SMART objectives.

Training needs assessment: Analyzing data and formulating recommendations



IV. TNA methods

This is a list of methods and techniques used in identifying training needs. The worksheets or instruments used can be attached to the report.

V. TNA results

This presents consolidated data with corresponding analysis. It also highlights the identified gaps and problems.

VI. Training intervention analysis

This provides information on trainee profile and the training environment profile to be considered prior to the design of the training program. Given the characteristics of the trainees and the performance environment, this portion describes the possible intervention options.

VII. Feasibility analysis

From the various options identified to bridge performance gaps, present the estimated cost and benefits of the various options.

VIII. Recommendations

List specific actions that the organization can take. This includes both training and non-training intervention recommendations.



Reference

FAO. 1992. Planning for Effective Training. Food and Agriculture Organization of the United Nations. FAO, Rome, Italy.

Training needs assessment: Analyzing data and formulating recommendations



Attachment 1

OHT

Levels of analysis in TNA

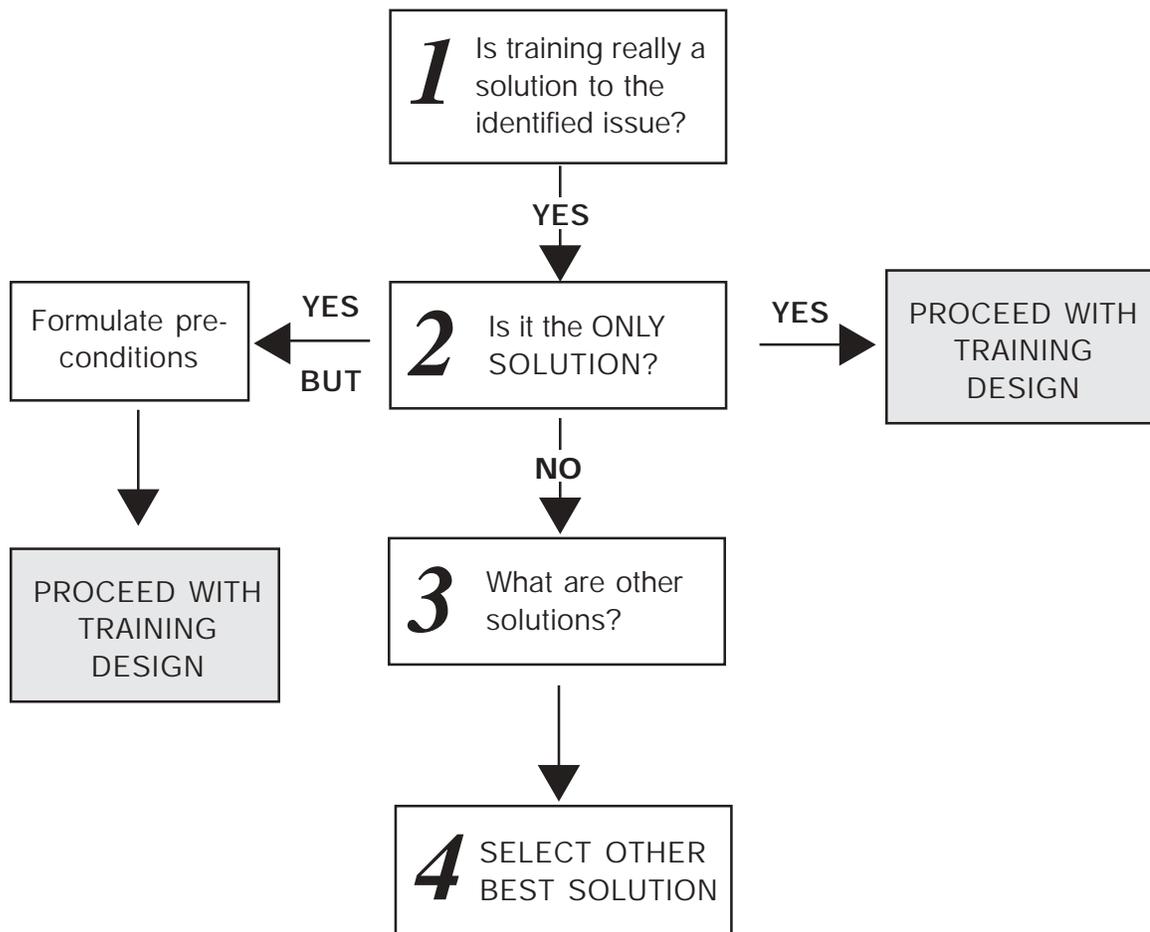
1. Analyzing data about the community.
2. Analyzing data about the organization.
3. Analyzing data about the performance of the individuals.
4. Analyzing information from the community, organization and individuals together.
5. Analyzing the feasibility of the recommended training interventions.





Training needs assessment: Analyzing data and formulating recommendations

Intervention analysis framework¹



¹ Intervention analysis is a process of establishing the best option to bridge the gaps between the desired situation of performance and the present/actual situation. This is done for each of the issues identified as a result of the Situational Analysis, Organizational Analysis and Task Analysis.

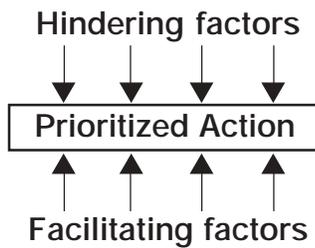
Training needs assessment: Analyzing data and formulating recommendations



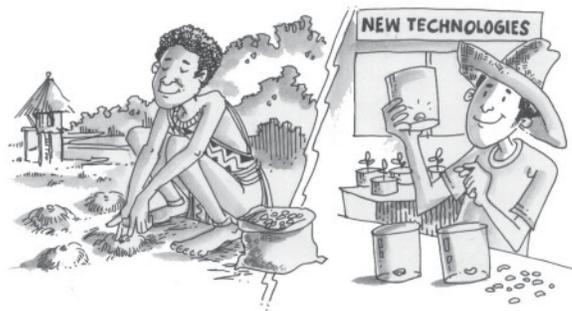
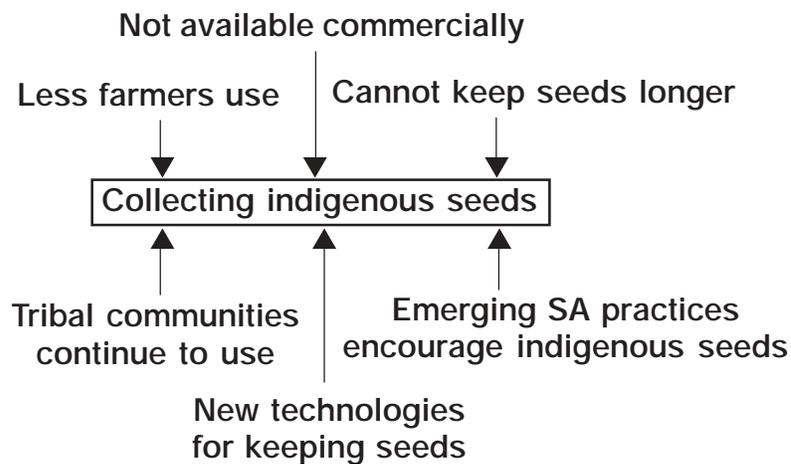
Attachment 3

OHT

Force-field analysis



Example:





Training needs assessment: Analyzing data and formulating recommendations

Analyzing SA strategies in use

Strengths	Weaknesses	Opportunities	Threats

Strengths

Refer to internal factors that bring about success to the organization.

Weaknesses

Refer to internal factors that contribute to failure of the organization

Opportunities

Refer to external factors that the organization can take advantage of to advance its organizational goals.

Threats

Refer to external factors that may negatively affect the organization when not appropriately managed.

Training needs assessment: Analyzing data and formulating recommendations



Attachment 5

OHT

Feasibility analysis

Performance gaps	Intervention options	Costs	Remarks
Example: Soil and water conservation techniques and models	<ul style="list-style-type: none"> Project site visit with practical exercise for 3 key staff 	\$1,000	Staff will have to train others upon return
	<ul style="list-style-type: none"> Training in-house for 10 staffs 	\$5,000	Practicum site far from the training venue

Performance gaps

Refers to the identified performance gap of individual farmer or a group of farmers or other learner/s of SA.

Intervention options

Refers to the possible option given the analysis of the environment in which the performance gap happens.

Cost

Includes the financial resource needed for the intervention to take place.

Remarks

Include opportunities that can be tapped, projected impact of intervention, possible problems or challenge in taking up an intervention.



Training needs assessment: Analyzing data and formulating recommendations

Training needs assessment report

(Suggested format)

- I. Rationale
- II. Description and Scope
- III. Objectives of the TNA
- IV. TNA Techniques
- V. TNA Results
- VI. Training Intervention Analysis
- VII. Feasibility Analysis

chapter two

Designing sustainable agriculture training programs



● Framework for designing training programs

● Formulating program goals and strategies

● Workshop on designing a training program





Framework for designing training programs

Duration

1 hour and 30 minutes

Description

Aside from implementing training, a training coordinator/trainer designs training programs and/or training events.

He/she does this based on identified training needs. This requires choosing and sequencing training activities that respond best to the needs of the participants and will achieve maximum impact.



The design process consists of various interrelated steps. In this session, a possible framework is offered to the participants in order to approach the design task more systematically. Because some tend to confuse the concepts of training program and training methods, the hierarchy in training will also be discussed. At the level of designing training events, the “Van Royen Wheel” planning tool is proposed as an aid to make training more effective.

Objectives

At the end of the session the participants should be able to:

- explain the main steps involved in SA training program design and how these are inter-related;
- explain the existing hierarchy in training; and
- design a training event using the “Van Royen Wheel” tool.

Learning aids and materials

- OHTs: “Systematic Approach to Training Program Development”, “Training Hierarchy” and “The Van Royen Planning Tool”
- Metacards, newsprints and permanent markers



Framework for designing training programs

■ Procedure

Activity 1: Brainstorming on steps taken in training program design [40 minutes]

- Initiate a brainstorming session by asking the participants to write on metacards the activities that they (or their colleagues) undertake in designing a training program. With the help of the group, post the various answers on the board and group them by main activities. This way, the main steps in designing a training program will emerge.
- Present the framework “Systematic Approach to Training Program Development” (see Attachment 1). Compare the framework with the results on the board and invite participants to ask questions about the framework. Also, ask the opinion of the participants about the usefulness of the framework.

Activity 2: Buzzing discussion to explain the heirarchy in training [10 minutes]

- Point-out that sometimes a training program is confused with a training event. If applicable, refer to answers displayed on the board. Ask the participants to discuss in pairs (buzz) how these two concepts are interrelated. Draw the answers from the participants and post them on the board. Wrap up the discussion by showing and explaining the OHT on “Hierarchy in Training” (see Attachment 2).

Activity 3 - Brainstorming on aspects to consider when designing a training event [45 minutes]

- Ask the participants to write on cards what aspects they consider when designing a training event. Group the various answers with the help of the participants, keeping in mind the “Van Royen Wheel” planning tool.
- Present the “Van Royen Wheel” (see Attachment 3) planning tool. Compare the results on the board with the planning tool. Ask the opinion of the participants about the usefulness of the tool.

Framework for designing training programs



- Summarize the main points of the session, emphasize the interrelatedness between all steps (the output of one step is the input for the next step). Also emphasize that M&E are integrated into all phases of the training cycle.



Suggested reading materials

Ban, van den Anne W. and Hawkins, H.S. 1996. Agricultural Extension. Blackwell Science, Oxford, U.K.

Veldhuizen, van Laurens, et.al. 1997. Developing Technology with farmers. A trainers guide for Participatory Learning. Zed Books, London.

IIRR. 1995. International Consultation on Training in Sustainable Agriculture, October 9 - 19 1995. IIRR, Silang, Cavite, Philippines.

Framework for designing training programs



Training design consists of several steps. An overview of the steps is given below. First, carry out the TNA. This forms the basis in formulating training goals. Afterwards, identify training activities based on the chosen training strategies, then, develop M&E activities. Once these training activities are identified, prepare for implementing the program.



A training program design normally describes the schedule, content and timing of activities, methods to be used, training aids, materials and location of training. It also includes previous training experiences of participants and training resources requirements.

The design should have a logical flow of topics/content of the various sessions and enable teams of trainers to coordinate their activities and divide the various tasks and participation during the training.

There tends to be a tension between planning ahead of a program or event and allowing for participants' influence. To deal with this tension, the first few activities or sessions could be planned in detail, then allow new suggestions later in the event or program.

Planning of training is done at various levels. First at the institutional level, set the wide goal and main objectives of the training program, including topics of training events in the program. Next level is the training team where overall outline of the event is determined plus analysing the envisaged participants, their needs specific objectives, topics, methods, etc. The final round is the detailed planning of each session.

Many of the issues for consideration in the planning process can be summarised under the questions: WHAT, WHY, WHO, HOW, WHEN, WHERE.

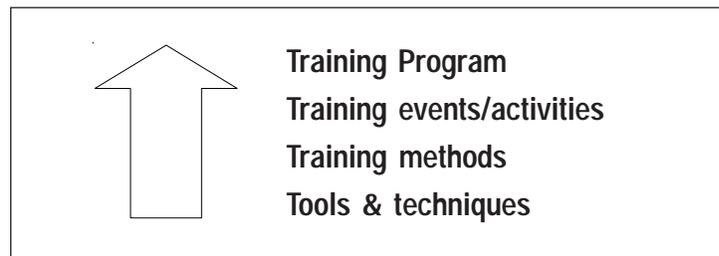
In planning participatory training events, the participants, their background, their needs (the WHO question above), will take an important place. It should be placed early on the agenda, and during planning, trainers should check whether their ideas fit the participants' background, skills and interests.



Framework for designing training programs

- Although the questions may suggest a step-by-step, linear planning approach, the actual planning is circular. The level of planning training events is illustrated in the Van Royen planning tool (see Attachment 1).

Within a training program the following hierarchy can be distinguished:



Within each level we have to make choices by asking the following questions:

What are the most appropriate tools & techniques for the planned method? Examples of techniques are the use of metacards or a code.

What are the most appropriate methods for the chosen training events? Examples of methods used are buzz discussion, workshop, interactive lecture or small group discussion.

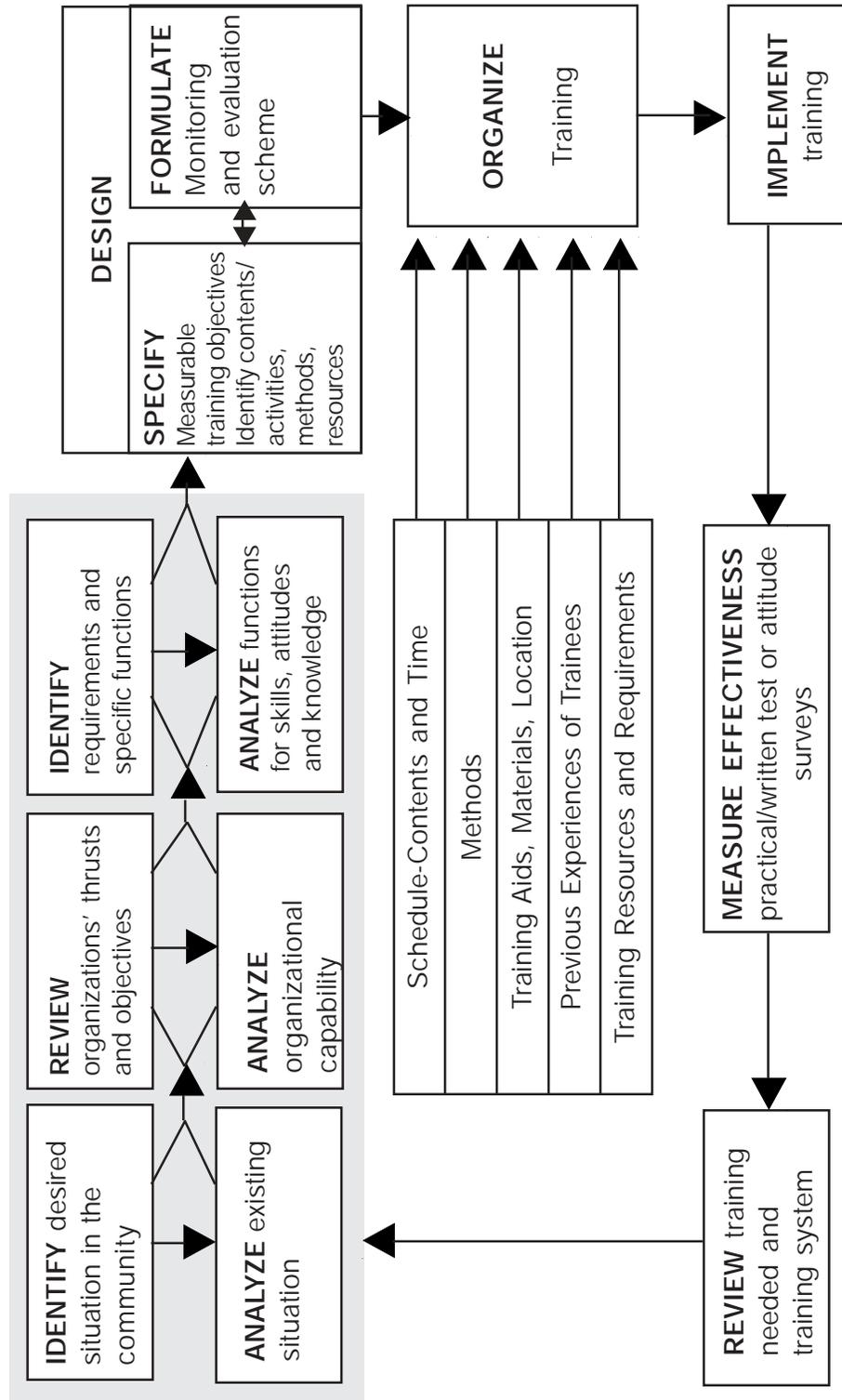
What are the most appropriate training events/activities for our training program? Examples of training events are course, study tour and field day or workshop.

Framework for designing training programs



OHT

Systematic approach to training program development¹ Training needs and analysis



¹ Adapted from Systematic Approach to Training Design, Walton, Ron. EITB, London by Espineli, Marissa B., International Institute of Rural Reconstruction (IIRR)



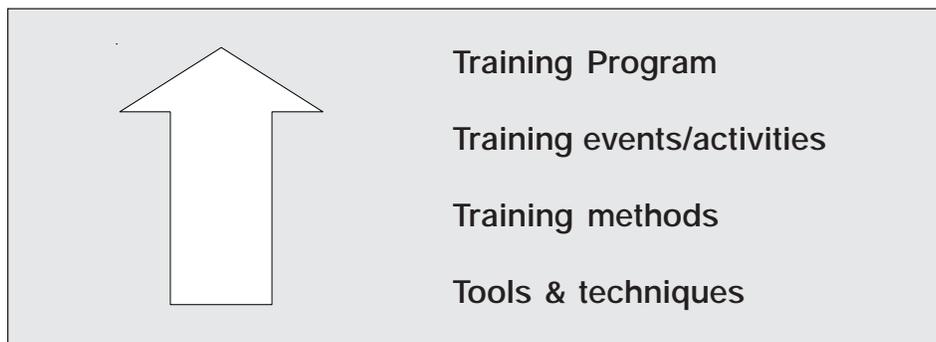
Framework for designing training programs

Attachment 2

OHT

Training hierarchy

Within a training program the following hierarchy can be distinguished:



Within each level we have to make choices:

- what are the most appropriate tools & techniques for the planned method?
- what are the most appropriate methods for the chosen training events? and
- what are the most appropriate training events/activities for our training program?

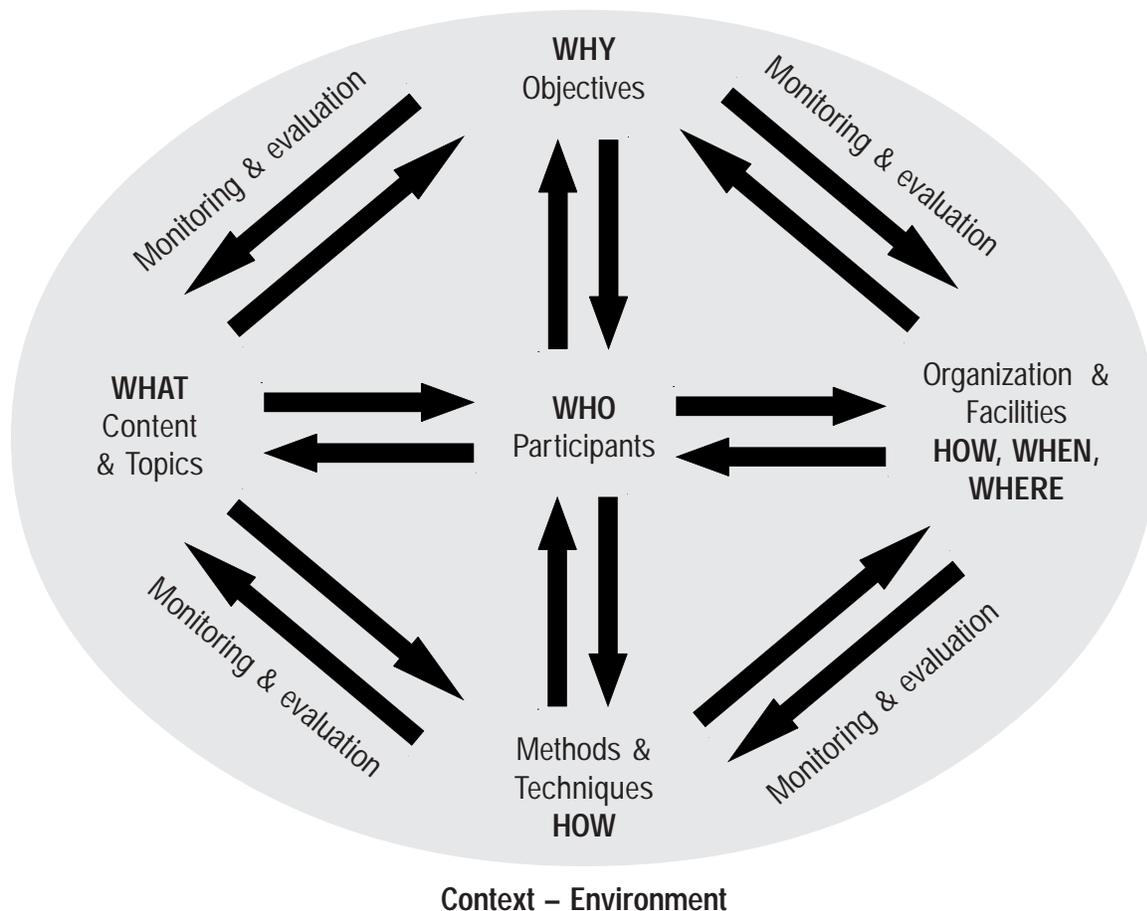
Framework for designing training programs



Attachment 3

OHT

The “Van Royen” planning tool for planning a training event



- Participants** : Background, experiences, and learning needs.
- Objectives** : Why is this training, what will be achieved by it?
- Content and topics** : What issues need to be discussed?
- Organization and facilities** : Timing, room (s), equipment, stationary, transport, etc.
- Methods and techniques** : How can these be learned, discussed?
- Monitoring and evaluation** : Assessment of all the above during and after training.
- Context-environment** : Weather, distractions from work, etc.



Formulating program goals and strategies

Duration

5 hours

Description



In this session, the participants formulate program goals and strategies as an integral part of the whole process of designing a training program for farmers or extension workers involved in SA. It emphasizes the importance of the coherence between program goals and strategies and focuses on strategies relevant to SA development. The participants share experiences on training strategies used by their respective organizations and look into their suitability for SA development. The participants visit a nearby extension organization involved in SA development, to give them a wider exposure to training strategies. All these activities prepare the participants for the next session on program design.

Objectives

At the end of the session, the participants should be able to:

1. explain the concept & bases of goal formulation;
2. identify the hierarchy of goals;
3. explain what a training strategy is;
4. determine the relationship between program goals and strategies and M&E;
5. describe strategies suitable to use in SA training program; and
6. identify the training strategy being used by an extension organization.

Learning aids and materials

- Metacards, newsprints, permanent markers
- Instruction sheet for the "Show Me ..." scenario game and "Inspirational walk"



Formulating program goals and strategies

■ Procedure

Activity 1: "Show Me" game on formulating goals [30 minutes]

Explain how the scenario game, "Show Me ...", is played.

- Game proper: introduce the topic on "goal formulation" by engaging the participants in a scenario game (see Attachment 1 for instruction sheet).
- Reflection: Relate the game to the topic on goal formulation (see Attachment 1 for the process questions). Write the participants' reflections on the board.
- Summary and interactive discussion: Summarize the reflections and discuss interactively with the participants the following topics: *concept & bases of goal formulation, hierarchy of goals*.



Activity 2: "Inspirational walk" [1 hour and 40 minutes]

- Divide the participants in groups of 4-6 each. Hand out the instruction sheet for the "inspirational walk", containing a description of the procedure and a set of questions on the training strategy followed by the participants' respective organizations. Ask the participants to read the instructions carefully and invite the sub-groups to go for a walk outside the classroom while at the same time exchanging experiences in relation to the followed training strategy.
- Upon returning to class, ask the participants to remain in sub-groups, reflect on the discussions during the walk and summarize the most important issues that arose for each question, and write it on newsprint. Each group reports the main issues of the discussions to the plenary. Synthesize the main points presented. Point out the importance of being consistent in our choices and choosing suitable strategies for SA development.
- Discuss with the participants the relationship between goal and strategy formulation and the fact that these two need to be compatible. Also point out that M&E is important from the beginning.



Formulating program goals and strategies



Activity 3- Agency visit to study training strategy [2 hours and 50 minutes]

- Ask the participants to individually prepare guide questions for the agency visit.
- List the questions on the board, by asking participants in turn, to provide one question.
- The participants visit an extension organization involved in SA development and interview relevant staff to learn more about their training strategy using the prepared questions earlier.
- Back in the classroom, participants form small groups and compare notes. They formulate the most important insights from the discussions on a newsprint. A poster session is held to share the observations between the groups. Wind up the session by giving comments on the posters.

Possible questions are:

- What are the SA practices promoted by the organization?
- What motivates the farmers to adopt SA in the area?
- How does the training program of the organization look like and how was it designed? What is the goal of the program? What is the training strategy?
- What knowledge, skills and attitudes are addressed by the training program and how?
- Were other training strategies used by the organization before and which one do they consider most successful? Why?



TIP



Instead of agency visit, a representative of an extension organization may be invited in class. This method will save considerable time.



TIP

In case an agency visit is difficult to organize, a case study describing a SA training program can be used instead. Possible cases are the video "Experience and experimentation" about IPM and the Farmer Fields School training approach in Indonesia.

Suggested reading materials



IIRR. 1995. International Consultation on training in Sustainable Agriculture, October 9-19, 1995. Philippines.

Veldhuizen et al. 1997. Developing Technology with farmers. A trainers guide for participatory learning. Zed Books, London, UK.



Formulating program goals and strategies

Introduction

Based on the TNA, an overall goal should be formulated for the training program. This goal should be formulated in terms of general behavior that the trainees should be able to display after the training program.

Training strategies

The concept of strategy means that some choices between alternatives have to be made. Unfortunately, these choices are often not made consciously in relation to training: the training has to be developed without delay, so a syllabus is developed quickly behind the desk, ensuring that the subject “gets covered”. A course is then organized in which lecturing seems the most important if not the only way to “get through” the syllabus.

The training strategy is often not deliberately chosen with the assumption that exposing trainees to the “subject matter” will be enough to change their behavior in the field. Below is an example of the underlying assumptions taken for training design by the Agriculture Man and Ecology (AME) project in India.

Common elements and principles of training efforts in the Agriculture Man and Ecology (AME) project in India are:

- Training is taken as a process towards creating a negotiation of platforms for sustainable land-use.
- Aim for long term association with NGOs, going from simple to complex interventions.
- Recognition that each organizations’ training process is unique.
- Training is participative and experiential.
- Intensive field-based training for field staff and strategic workshop, planning and evaluation sessions for functionaries.
- Season-long practical training in tandem with events in the field.
- Aim at equal men-women ratio and monitoring of their participation.
- Aim for training in network and enhance network building.

Source: Van Walsum et al, 1998.



Formulating program goals and strategies

- A training strategy explains why a certain combination of activities, methods and means are selected in order to reach specified objectives or a goal. It explains why emphasis is given to certain type(s) of training event(s) and supporting activities. Each strategy is based on certain assumptions regarding learning and change in general. It offers the best way to realize a particular goal or set of objectives in particular, given a certain target-group, available resources, the socio-political context and other working conditions.

In general, training strategies are often presented as alternative approaches.

Individuals vs. team

The training may be directed primarily to individuals or to a whole team of workers assigned to do a certain task.

Temporary vs. permanent

Training should not be a one shot affair but a continuous process, because permanent training is more effective than temporary training. T-A-R-T-A-R (Training-Action-Reflection) is an example of such a strategy. Those engaged in the learning process undergo a training activity, apply what they have learned, come back together to reflect on the difficulties encountered in the application of the learning, and are then trained again, go out, apply, etc.

Trainer- vs. learner-controlled

Training activities can be planned or shaped by the trainers or the participants. Training for development has a strong bias towards the latter.

Field- vs. center-based learning

Learning from concrete practical experiences requires more field-based learning and is more effective in developing attitudes and skills. It is difficult to train extension workers to implement participatory technology development among farmers, by conducting classroom sessions only.

Formulating program goals and strategies



Focus on participation vs. technology

Focus on participatory technology development rather than transferring technology, will make farmers become less dependent on outsiders and makes development more sustainable. However, we should balance the focus and not neglect technology dissemination either.

Direct training vs training of trainer

You may train all farmers or extension staff or train instead a farmer leader or the team-leader of the extension staff, who in turn trains the other farmers or extension staff.

Various questions can be asked. Examples are:

- **Who to train within the organization and who first?** Does one start with training of higher-level, decision makers, possible future trainers or the field staff or farmers. Is combined training possible?
- **Number of training events for each staff member?** Does one plan training session for the relevant staff covering all relevant topics or a series of training sessions, one building on the other? How does one divide the various topics over the different training events?
- **Are there other options for staff learning about SA/PTD outside the training?** Training takes just a few days or a week. But within the regular operations of an organization, there may be other opportunities to encourage learning. If these can be mobilized, the learning becomes an integral part of the organization (e.g., by use of regular staff meetings, on the job guidance, etc.).
- **Training and/or organizational change?** Change initiated during training will not be sustained if the organization where participants work does not encourage learning application. The possibilities to influence the organizational culture, the target setting, the staff monitoring and reward mechanisms, etc. may often be limited.



Adapted from Veldhuizen, van Laurenz, et. al., 1997.



Formulating program goals and strategies

- In Asia, the Farmer Field School approach is widespread. It is a good example of a training strategy suitable for SA development.

The farmer field school approach

- **Problem-posing/problem-solving.** In this form of training problems are seen as challenges, not constraints. Farmer-groups learn numerous analytical methods. Problems are posed to groups in a gradual manner, such that trainees can build confidence in their ability to identify and tackle any problem they might encounter in the field.
- **Field-based education.** Put farmers in a classroom and if they have been to school, what they remember is the bad times they probably had in the classroom. Education in the classroom can only mimic the natural world. Putting the classroom in the field allows the field to be the learning material and the farmer can learn from live examples. Putting the classroom in the field means that the extension worker must come to terms with the farmer in the farmer's domain.
- **Principle not packages.** Educational programs do not promote packages that present weekly messages. They take a broad integrated approach to work with farmers based on the principles that farmers need to learn to be better farmers and optimize their incomes. The Farmer Field Schools impart principles. Any activity encompasses several principles that outline cause and effect relationships. Principles help farmers discover and learn; farmers learn to learn so they can continue learning. Packages have nothing to do with learning and do not encourage learning. In the long run they are neither cost-effective nor effective at improving the quality of farmers management skills. Skilled farmers can optimize yields independently of others. Packaged approaches increase the dependence of farmers on central planners.
- **Training driven research.** Research must be responsive to field needs. By and large, researchers have got it backwards. Research programs in agriculture drive the extension or education program that the research should actually be serving. What farmers need to know to be able to operate sustainably, both environmentally and economically, should drive the research program. In the Farmer Field School approach, all research is based on training needs or is supportive to farmers' learning.



Source: IPM website

Formulating program goals and strategies



Some key questions in designing a training strategy are:

1. What are the underlying assumptions of the training?
2. Will a program based on this strategy be effective in the given context? Will it realize the desired changes?
3. Will the training strategy lead to an efficient training program? Does the plan use minimum inputs to realize the required changes? Is the program realistic in its assumptions regarding the availability of financial, human and other resources?
4. Does the strategy relate well to the characteristics and conditions of the potential participants?
5. Is the plan flexible? Will it still work under scarce resource conditions?



References

IIRR. 1995. International consultation on training in sustainable agriculture. October 9-19, 1995. IIRR, Silang, Cavite, Philippines.

IPM website: www.ipmnet.org

Veldhuizen et al. 1997. Developing technology with farmers: A trainers guide for participatory learning. Zed Books, London.

Van Walsum et. al., 1998. From peanuts to platforms, AME, Bangalore, India.

Formulating program goals and strategies



Attachment 1

Instruction Sheet

“Show Me” scenario game

Mechanics of the game:

1. Ask for three volunteers to become the judges of the game. Divide the rest of the participants into two groups (teams A & B) to become the actors.
2. Explain to the participants that teams A & B will “act out” three scenarios one at a time. The facilitator will announce each of scenarios. Request the judges to discuss their own set of criteria in deciding which is the best team.
3. Facilitator announces the first scenario and gives teams A & B a few seconds to act it out while the judges observe. Do the same for the second and last scenarios.
4. Facilitator gives the judges a few seconds to prepare their verdict.
5. The judges announce the winner. The rest acknowledge the winner by giving three claps.

Note:

The facilitator can think of other scenarios of any desirable situation related to SA which the participants are more familiar with.

Scenarios:

1. Show me “People Power”!
2. Show me “Sustainable Agriculture”!
3. Show me “Self-reliance”!

Process Questions:

For the players:

1. What did you consider in acting-out a scenario?
2. What similarities do you see between building a scenario and formulating a goal?

For the judges:

1. What were your criteria in selecting the winner of the game?
2. How would you relate any of these criteria with the formulation of a goal?



Formulating program goals and strategies

Attachment 2

Questions for the “Inspirational Walk”

Procedure:

While walking (stay close together, otherwise not everybody can follow the discussion), all members of the group take turns in answering the first question. Other members will only ask questions for clarification (probing!). When all group members have answered the question, continue with question 2. After completing question 2 in the same way, proceed to question no. 3. After completing all questions, return to the classroom and ask the facilitator for further instructions.

1. Describe the SA training program organized and implemented by your organization.
2. What kind of training strategy is followed in the training program you are involved in ? What are the advantages and what are the limitations of the followed strategy?
3. Do your training programs include M&E activities? What are these activities and when do they take place?

Workshop on designing a training program



Duration

6 hours

Description

In this session the participants will practice designing an actual training program. They combine their own experiences with training design by applying what they learned about the design framework, planning tool, goal setting and strategy development from the previous two sessions.



The training needs identified in earlier sessions forms the basis for the program design. Elements of a program design include title, rationale, target group, program goal, training strategy, training events, activities, schedule M&E scheme and resource requirements.

Objectives

At the end of the session the participants should be able to:

- mention main elements to be included in SA training program design; and
- design SA training program that addresses identified needs.

Learning aids and materials

- Newsprints and permanent markers
- Hand-out on “Workshop on designing training program”.
- OHT: “Components of a training program”.



TIP

If no TNA activity was carried out by the participants, a case-study or an existing TNA report could serve as starting point for program design.



Workshop on designing a training program

■ Procedure

Activity 1: Lecturette on components of a training program [10 minutes]

- Present a common format for a training program design, using the OHT of “Components of a training program”.

Activity 2: Workshop on designing a training program [5 hours and 50 minutes]

- Group the participants in the same way as they were grouped during the TNA exercise. Distribute the handout and explain to the participants that they should use the format as described. However, the M&E scheme is left out since it is dealt with in another session. Each group will work on the training program design assignment, using the TNA results from the earlier session.
- Each sub-group presents their respective training programs in plenary. Request members of the other groups to ask questions and give comments on the program design. Give your comments after each group has presented.
- Summarize the session by highlighting consistency in the connection with the TNA results and consideration of adult learning and SA principles.

Workshop on designing a training program



A training program design provides information on a series of training activities (program) and serves as a guide for its implementation. It provides the management information on the need and appropriateness of training activities while serving as a basis for allocating resources. It also provides participants with the purpose, content and activities of the training program.



Generally, the components of a training program are:

1. **Program title**
2. **Rationale** - gives an overview of the training program and provides the reason and expectations on how it will contribute to meeting a desired goal;
3. **Target group** - describes the number of trainees and who need to be trained under the program;
4. **Program goal** - defines intended results at the community and/or organizational level;
5. **Training strategy** - states the explicit choices made and assumptions behind the training program;
6. **Training events** - describes the different types of training events that will be organized under the program;
7. **Schedule** - time schedule of the various events and their sequencing;
8. **Resources required** - financial and human resources needed; and
9. **M&E scheme**

A good plan is flexible, brief and precise, and with complete components.

Workshop on designing a training program



Attachment 1

OHT

Components of a training program

- Program title
- Rationale
- Target group
- Program goal
- Training strategy
- Training events
- Schedule
- Resources required

chapter three

Sustainable agriculture training program implementation



- Participatory training methods and techniques
- Overview of session design
- Preparing for session delivery
- Facilitation and delivery techniques
- Developing and using selected training materials

Participatory training methods and techniques



Duration

3 hours and 20 minutes



Description

A wide variety of methods and techniques suitable for SA training is available. In this session we will focus on some suitable methods and techniques for participatory learning in SA. Methods refer to systematic procedures to do something (e.g., case study) while techniques refer to skillful manipulation of things (e.g., use of cards). It should be kept in mind though, that methods and techniques are merely tools for learning. Our behavior and attitude towards training are equally important.

Objectives

At the end of the session, the participants should be able to:

- explain the importance of using participatory training methods and techniques; and
- demonstrate the use of selected participatory training methods and techniques.

Learning aids and materials

- Hand-out/instructions sheets on selected participatory training methods and techniques
- Guide questions in selecting participatory training methods/techniques
- Diagram showing the continuum of trainer-centered through learner-centered training methods
- Newsprint, permanent marker, boardmarkers and masking tape
- colored meta cards



Participatory training methods and techniques

■ Procedure

Activity 1: Brainstorming on participatory methods [30 minutes]

- Invite the participants to share their experiences regarding the use of participatory methods they are familiar with.
- On the board, list the various methods and techniques mentioned by the participants. The facilitator completes the list by adding methods and techniques not mentioned by the participants.

Activity2: “Fishbowl” exercise on selecting participatory methods and techniques [20 minutes]

- Using the fishbowl method (described in the hand-out), ask the participants to discuss their criteria for selecting participatory training methods and techniques (See in handout the guide questions in selecting participatory methods and techniques). The facilitator makes a summary of the basis for selection.

Activity 3: Practicum [2 hours and 30 minutes]

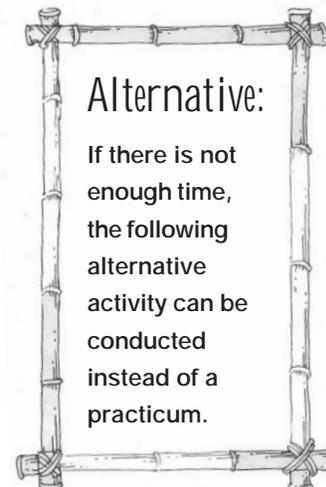
- Form four sub-groups, each sub-group selects one participatory training method or technique from the instruction sheets. The sub-group practices the method or technique, analyzes its participatory aspect and then writes the findings in a newsprint.
- The sub-groups report their findings to the plenary group and, if possible, will give a small demonstration of how the method was used.
- Summarize the findings by presenting where each method lies in the continuum of trainer-centered methods through learner-centered methods.

Participatory training methods and techniques



Alternative activity: Discussion on training methods continuum [50 minutes]

- Present on the board the continuum of trainer-centered to trainee-centered training methods.
- Ask the participants to write the different participatory training methods in meta cards. One method, one card. Invite the participants to stick each of the completed cards in the continuum. Discuss with the participants the reason for placing particular training methods in specific location in the continuum.
- Summarize the ideas from the discussions comparing the trainer-centered and trainee-centered training methods.



Suggested reading materials



- Eitington, J. E. 1996. *The Winning Trainer: Winning Ways to Involve People in Learning*. 3rd edition. Gulf Publishing Co., Houston, Texas, 625 p.
- Pretty, J. N., I. Guijt, J. Thompson and I. Scoones. 1995. *A Trainer's Guide for Participatory Learning and Action*. International Institute for Environment and Development, London, 267 p.
- Voluntary Service Overseas (VSO), International Institute of Rural Reconstruction (IIRR) and Popular Education for People's Empowerment. 1998. *Creative Training: A User's Guide*. VSO Philippines, Quezon City.



Participatory training methods and techniques

Introduction

In our work, we mostly train adults. Therefore, we should follow the adult learning principles and use participatory training methods and techniques as much as possible. Keep in mind that, in practice, the effects of a certain training method/technique will vary strongly with the:



- context in which it is applied (trainer, trainees, subject/objectives, training climate, etc);
- combination/variation of technique with other techniques. The effect of a certain training technique may change or be strengthened (or weakened) considerably when applied in combination with other techniques (e.g., lecture with audio-visuals and buzz groups); and
- variation of learning techniques in each training will improve the potential impact of each individual technique. Variation can include changes from passive to active, from abstract to concrete, from exploring new ideas to integration with existing knowledge, variation from plenary to small group work, or from lecture to practical work.

Considerations in selecting participatory training methods/techniques

Each training method/technique has its own special features. So when preparing a training activity, the trainer has to make decisions about which methods/techniques will be most appropriate for a particular training event. Questions that may be asked are:

Does the method:

- provide for feedback?
- relate to experiences of participants?
- provide for motivation?
- provide for individual evaluation?
- respect adult learning principles?



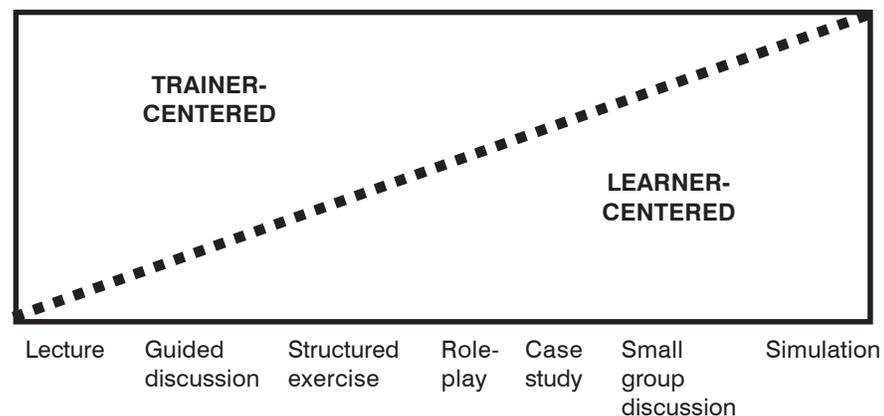
Participatory training methods and techniques

- trigger wider applications?
- allow for individual differences?
- encourage trainee initiative and autonomy?
- provide for repetition and exercises?
- provide for a variety of activities?
- provide for interaction? and
- encourage communication?

Other questions to be asked are:

- is this technique applicable with the resources available and is it cost-effective?
- what are the available resources (preparation time, implementation time; specific facilities, materials and equipment, specialized trainers, etc.) and what are the resource requirements of the technique that the trainer wants to apply?
- is this technique efficient in realizing the learning objective under the present conditions?
- are the trainers able to handle the method/technique? and
- what are the expectations of the participants?

Training methods can be placed on a continuum from trainer-centered to trainee-centered as illustrated below:



Participatory training methods and techniques



Selected methods that enhance participation

1. Cards

Cards can be used to visualize discussions. Points raised become clear for all to see and this method enables easy synthesis or summary by moving the cards. Use of cards enhances participation and leads to a joint ownership of the results of a discussion.

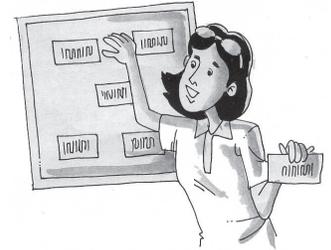
We can use cards in all sorts of situations. Cards can be used to generate ideas during brainstorming sessions, find solutions to a certain problem, to make an inventory of experiences or to identify the relationship between problems.

Advantages of using cards

- It gives everyone an opportunity to contribute.
- It ensures that experiences each participant will share will become clear.
- Helps participants to obtain a wider overview of the various issues or viewpoints.

Main steps

1. **Generate ideas:** Ask clear questions to encourage participants to formulate their opinions.
2. **Collect ideas:** Results/answers are written on cards and put on the board for all to see. This collection of cards (ideas) represents the joint results of the group to work with.
3. **Clarify ideas:** Read the cards: Ensure that unclear statements are clarified. Replace cards with ones with improved text.
4. **Analyze ideas:** Form clusters of cards with similar or related ideas to identify main themes.
5. **Follow-up:** Themes identified by their cards/ideas can be taken up for further discussion or studied one by one to deepen the analysis.





Participatory training methods and techniques

■ Use of the cards

To ensure that cards can be manipulated easily and the ideas written on them are clear for all to see, consider the following:

- minimum card size should be approximately 10 X 25 cm;
- write only one topic/idea for each card;
- write a maximum of three lines on a card; and
- restrict number of cards per person in larger groups depending on the time available for analysis.

Analysis through clustering

There are several ways to facilitate the clustering process or grouping of cards.

1. Start with 2 cards. Ask participants whether they present a similar or related idea. If so, cluster. If not, put them separately.
2. Take the third card. Ask participants whether it relates to either one of the first cards. If so, add to that card. If not, keep it separate.
3. Take the other cards one by one and repeat the process for each. Results will be a number of clusters and may leave a few individual cards. These can be left as individual “clusters” or grouped under “other ideas”.
4. End the clustering process by looking at the common factor of the cluster: “What do these ideas have in common, what is the common theme?”. Once identified, write it on a card (different color) and put it next to the cluster.

Leave difficult cards aside at the beginning, to speed up the process and maintain interest. In case of uncertainty on a particular card, it may have to be clarified again by the author. Once the meaning is clear, clustering should be easy.



Participatory training methods and techniques

General considerations

- It is important to include all ideas from the participants in the brainstorming. Do not criticize or ridicule ideas. This would make others hesitant to contribute.
- Always ensure that cards are clear for all to see during the process of clustering.
- If participants have easy access to the board with the cards, participation in the clustering process will be greater. People may physically come forward and move cards. So, prevent big tables or large distances between board and participants.

2. Problem-posing materials

Problem-posing materials are concrete presentations of an issue or problem familiar to all, about which the participants have strong feelings. These materials can take many forms: a drawing, drama, slides, posters, (part of) a video.

Why do we use problem-posing materials

Problem-posing materials are used to encourage participants to open up on sensitive issues, and change previously fixed opinions and ideas. Use of such materials contributes to a deeper change of attitude.

Examples of problem-posing materials

- Slide series (e.g., the one used for participatory extension)
- Poster showing a village scene
- Role-play showing bad interview
- Small plays emphasizing a gender issue etc.



Participatory training methods and techniques

■ How do we use problem-posing materials

Using problem-posing materials should always be done in 2 steps:

- watch, study and/or experience the problem-posing material; and
- conduct critical reflection in a group.

After the group has seen or experienced the problem-posing material, through discussion, we can moderate critical reflection.

First, focus on describing and analyzing what the participants saw. Then, challenge the participants to look at their own situation. The reflection may follow these steps:

- Description - what happened, what did you see, hear, feel?
- First analysis - why did this happen?
- Link to real, own life - has this happened to us? Do we have similar experiences?
- Related problems - what problems do these lead to?
- Root causes - what really causes this in our work, life? and
- Action, solutions - what can be done, what are the alternatives?

3. Small group discussion

Up to six participants cooperate in a small group to discuss a certain topic and/or perform a certain task. Small group work is generally followed by reporting and exchange of the results of the group work. Group discussion is often combined with other methods (lecture, case study, etc.). Small group discussion needs good preparation (instruction, reporting) and suitable localities. This method is especially suited:

- for topics in which participants have some experience and knowledge;
- when the objective is to raise interest/involvement of participants in the topic;
- for “digesting” new information by discussion or execution of a group task; and
- for developing of skills in team work, problem solving, and decision making.



Participatory training methods and techniques



4. Interactive lecture

In a traditional lecture, an “expert” conveys information about a certain topic to an audience. The lecture may be combined with audio-visuals, “buzz-groups” during intervals, general discussion afterwards, and other methods/techniques. The lecture is mainly suited to make the audience aware of new ideas and information and to introduce subjects outside the participant’s experience and knowledge. Skill and attitude components are not developed among participants through lecturing.

A lecture can be more effective by doing it in an interactive way. Consider the experiences and knowledge of the participants and build upon that in the lecture. Invite and entertain questions posed by participants at any time regardless of whether or not it is in line with the path you have set out for the lecture. Raise question as you present the key message of the lecture. These questions should help participants relate back to their experience and current work realities.

5. Case study

The participants analyze (in-depth, and often in small groups) one or more descriptions of real life situations and experiences. The case study method is particularly useful:

- for developing insight in future work situations;
- to convey information outside the experience of the participants; and
- to strengthen the diagnostic and problem solving skills of the participants.

The case study method can be implemented in various ways, among others:

- the “description” may be oral, written or recorded (audio tape, audio-visuals);
- the cases may be prepared by the participants themselves and/or by the trainer; and





Participatory training methods and techniques

- the complexity of the case study may range from a simple description of a real life incident to a description with extensive data sets of a complex situation.

Resource requirements vary with the type of case studies one is dealing with. Preparation time will vary from very short (participant cases prepared on the spot) to very long (trainer prepared complex cases based on sets of research data).

6. Simulation game

Participants take part in a game that simulates real-life interactions and processes in a controlled and simplified way. Then they analyze the outcomes and interactions of the game.

The main function of simulation games is to develop the participant's insight into complex processes and interactions. Simulation games are especially important when in reality there is a long time lag between causes and consequences of the real-life situation.

A simulation game needs careful planning and preparation. Implementation of a well-developed game is relatively easy to handle. Implementation is time consuming, but can be very rewarding and can open completely new learning perspectives.

7. Role play

Participants examine the nature of certain real-life and job-related roles by adopting and acting out these roles in a training situation. The role play method is particularly useful for:

- developing participant's flexibility and understanding of other views and one's own attitudes vis-a-vis those other roles/positions; and
- developing skills in group work, negotiating skills, creativity, leadership and supervision skills.



Participatory training methods and techniques



A variety of role play modalities exists (e.g., with open roles, with prescribed roles, role plays with one or with various phases).

The preparation and implementation of a role play bears low cost and is relatively easy to handle.

8. Field (on-the-job) training

Learning from good and bad experiences gained during implementation of a job under guidance of a more experienced person is known as “on-the-job” training. The guidance is organized in a variety of ways:

- coupling the trainee with a skilled worker during a period of time;
- regular coaching of the trainee by a trainer or, a more experienced colleague; and
- developing a group task in the actual field situation (e.g., implementing a TNA or a participatory analysis of farming systems) with some guidance and feedback from the trainer.

The effectiveness of on-the-job training depends on:

- proper preparation of the on-the-job instruction or coaching;
- combining on-the-job training with periodic group meetings where experiences can be exchanged between peers and they can assist each other to overcome problems; and
- the ability of the participant to reflect upon daily experiences and to discover new learning points.

Field training has an impact on a mix of knowledge and skill components. If well guided, exposure to field conditions and field work can have strong positive effects on attitudes and motivation.

Resource requirements vary with the type and degree of guidance required and given.





Participatory training methods and techniques



■ 9. “Fishbowl”

The “fishbowl” method is an excellent way to enhance participation during discussions.

The mechanics of the “fishbowl” method are:

- form two circles (an inner and an outer) using eight chairs. The remaining participants sit outside the circles;
- the inner circle represents a fish bowl with fishes;
- the outer circle are the observers/listeners;
- only seven participants sit in the inner circle, so there is an empty chair; and
- the participants in the inner circle discuss a topic. If participants in the outer circle want to participate in the discussion, they have to join the “fishes” and occupy the empty chair (“jumping fish”). But, after participating they return immediately to their chair in the outer circle.

The “fishbowl” method is advantageous because it:

- allows discussion of many topics;
- helps to break shyness of participants;
- “jumping fish” idea invites participation;
- peaceful way of discussion;
- good for sharing experiences and many ideas emerge;
- limits over-participation; and
- no interruption in expressing one’s self.

10. Demonstration

Demonstration is a way to show people how to do something. Usually, you show them how and tell them why you do it. A good demonstration shows how to do something so clearly and so carefully that the person watching can copy what you have done. This is how to make demonstration effective



Participatory training methods and techniques



Showing How: Demonstration as a training method

How demonstrations teach new practices

- They help people take more interest in learning.
- They combine seeing with learning.
- They encourage people to try new practices.
- They make each step easy to understand.
- They convince people to see and examine results.

Why demonstrations improve your program

- They are dramatic and attract attention.
- They build confidence in the local worker.
- Announcements of a demonstration can be used to publicize a program.
- Demonstration results make news that can carry the suggested practice to a broader audience.

Getting ready for the demonstrations

Plan ahead

Plan your demonstration as a part of your total program. Weeks or even months before you give a demonstration, write in your workplan, where and when you will use demonstrations to teach certain skills.

Where and when

Plan when and where you will give your demonstration. Plan the time and place most convenient for the people you want to reach. Ask them to help you plan. They will know when they will have free time. They will also know about a suitable place for the number of people you expect to attend. You may need to review with them the requirements for a meeting place.

Select a place

Select a place large enough for the audience where everyone can see the demonstration and can hear what you say. For instance, a plowing demonstration should be held in the field.





Participatory training methods and techniques

■ **Publicity**

Advertise the demonstration ahead of time to reach the people you want to attend. In your workplan, indicate who these people would be. Will posters tell them about the demonstration? Do you have leaders in the village who will notify others? Call on key people in the village in advance, to ensure they remember the time and place of the demonstration.

Study your subject

To conduct a successful demonstration, study your subject. Be skilled in the practice you plan to demonstrate. Know more about your subject than you tell your audience. They will ask questions.

Convince them that you are thoroughly familiar with the technology/ method you are teaching.

Select the right demonstration

A demonstration should:

- teach a sound practice;
- have a wide application;
- be timely- show how to treat seeds for disease just before planting season and how to prepare beans when they are available in the garden; and
- be one that can be done with available equipment. Don't demonstrate how to can fruits when people have no cans or jars. Consider a drying demonstration instead. Don't demonstrate the use of a sprayer if the farmer can't get one.

Outline steps

Make an outline. List each step to take when you give your demonstration. Each step should be an act you will perform. For example, to dust a chicken to get rid of lice, some steps would be:

1. hold the bird on a firm object such as a table;
2. put a pinch of dusting powder on its head, neck, breast, tail, thighs, and under its wings; and
3. work powder in well.



Participatory training methods and techniques

The listed steps is the framework of your demonstration. But it is not enough to make it a success. Use key points to support every step. Key points are the facts that are emphasized for each step. These facts will make each step easier for your audience to understand or will eliminate any hazards as they practice what you are demonstrating.

List key points

List this information in your outline under a column called Key Points. Here are two examples:

1. Making cereal

Step
Add cereal to water

Key Points
Water must be boiling, stir continuously.

2. Transplanting a tomato plant

Step
Put earth around plant

Key Points
Press firmly, half way up stem.

Both steps and key points should be written in simple, concise terms. For example, in transplanting, it is better to write “press firmly” and “half way up stem”, which you can read quickly, than the full comment you will make. The commentary might be “While you hold the plant upright in your left hand, put the earth around the plant with your right hand. When you have put enough earth around the plant to reach half way up the stem, press the earth down firmly with your hand.”

Assemble equipment and material

After outlining your demonstration - step by step with all the key points, your next job is to assemble everything you will use. Select an equipment that is familiar to the people who will attend. For example, if you plan to show village women how to cook, use cooking pots, spoons and other utensils familiar to them. A second choice would be to use equipment available in the local market at a price they can afford to pay.

If you are teaching how to prepare an old food in a new way, use the same kinds of equipment they now use. When you want to demonstrate a new piece of equipment, use foods that are familiar to the group. Arrange your equipment neatly as you plan to use it in your demonstration.



Participatory training methods and techniques

■ Rehearse

Like an actor on the stage, you must rehearse your demonstration. Whether you are an experienced demonstrator or a beginner, this is necessary.

This is the only way you will know that you have:

- all the equipment and supplies you will need;
- all the information you will need; and
- most important of all, that you will know how to coordinate what you do with what you say.

People enjoy watching an expert work. They appreciate forethought and careful preparation. When you give a well-prepared demonstration, it lets your audience know that you think they are important.

Rehearse your demonstration exactly as you plan to give it at your meeting. Find a place to practice where you will be uninterrupted. Do and say out loud exactly what you are going to do and say in your demonstration. Repeat the demonstration until you know it well enough to welcome questions or interruptions without losing your chain of thought.

Suggested outline for planning a demonstration

Demonstration:

Why is this demonstration important?

What materials and equipment will be needed?

How will the demonstration be conducted?

Steps	Key points
<hr/>	<hr/>
<hr/>	<hr/>
<hr/>	<hr/>

What kind of follow up will I use?

How will I evaluate this demonstration? (see Evaluation for example)



Participatory training methods and techniques

Conducting your demonstration

Before the audience arrive

On the day you will give the demonstration, plan to reach the meeting place ahead of time. For many demonstrations, a half hour before the meeting starts is sufficient. But for others, you may need more time. You need time to:

1. arrange your demonstration equipment and supplies neatly;
2. check any equipment such as stove, sprayers - to see if it will work; and
3. make sure your audience can see and hear every step of your demonstration.

Presentation

Your presentation will consist of four parts. They are:

1. *Introduction* - explain the need for this demonstration. Tell your audience why you are showing this particular practice in the community. Also tell them how it will improve on the method now in use. Be sure to acknowledge the present method (if applicable), show also that you understand the method that the people now use. Make your introduction short, but make it interesting. Convince your listeners that the subject is important.
2. *Demonstration* - make the demonstration look easy so the group will want to try it at home. Make it really fun.
 - Be enthusiastic - enthusiasm is contagious. Believe in what you are doing.
 - Be yourself - you can be yourself if you have practiced your demonstration and become confident in your ability to present it. Smile occasionally as you talk to your audience.
 - Talk to your audience - each member of your audience should feel you are talking to them. Look at your audience whenever you can. During your demonstration, don't attempt to talk to your audience while your back is turned to them.



Participatory training methods and techniques

- Speak loud and clear - be sure the audience can hear you. Speak distinctly. You may wish to have someone posted in the back to raise a hand when can't be heard. Use words that the audience will understand. If you use words you think are unfamiliar to them, explain the meaning.
 - Follow your outline - explain step-by-step what you are doing, how it's done, and why this practice is important. Have some of the audience demonstrate back to you the steps that you feel are difficult. Repeat a step if necessary.
 - Work alone - it may be better not to have an assistant when you demonstrate. The group may get the impression that the operation is too complicated for one person to do. However, you could ask someone in the audience to help in certain lengthy operations, after you have shown your ability to work alone.
3. *Question and answer period* - encourage discussion. You may tell your audience that there will be time at the end of your demonstration for questions. (if you feel that questions during the demonstration will help make it clearer, then tell your audience that questions are welcome any time) No matter what instructions you give your audience, you must be prepared to answer questions that interrupt your demonstration and be prepared to handle them graciously.

Always repeat a question so everyone can hear it. Be sincere and tactful in answering. Suggest, don't dictate. They may ask some questions that seem silly to you, but be sure to answer them willingly. Discourage the group from laughing at or embarrassing anyone that asks a question. Even if a question is asked at a time or on a subject you feel is unsuitable, you must never make the questioner feel uncomfortable.

4. *Summary* - Summarize your entire demonstration through a handout reference materials. Advise the audience where to get further assistance, and where they can get materials and equipment. If this demonstration is one of a series, announce when and where the next one will be given.



Participatory training methods and techniques

5. *Follow-up* - publicize what happened at the demonstration. Here are some ways you can publicize your demonstration.
 - News item - if you have a newspaper available, use local names, incidents, and situations as background to describe the new practice;
 - Radio - if you have a radio program, publicize your demonstration the same as in a newspaper;
 - Ask leaders to talk to others about the demonstration; and
 - Hold a follow-up meeting at the home of a family who is satisfactorily using the practice shown in the demonstration. This type of meeting is an effective way to further prove the local value of the practice.

6. *Evaluate* - a good demonstration should produce changes in the methods people use. To measure your effectiveness:
 - visit people who attended the demonstration and find out if they have put the recommendations into practice; and
 - check with local store-keepers to see if they have had increased demands for special materials you recommended.

Follow-up

Ask farmers who attend the demonstration to show neighbors how to transplant tomatoes. Review main points in a weekly wall newspaper.

Evaluation

Visit the farmers who saw the demonstration. Have they tried transplanting tomatoes this way?



Participatory training methods and techniques

Evaluate your demonstration

Everyone likes to know how well they have performed. Here is a score card you can use to evaluate your demonstration.

Score Card

	Yes	No
Plan (20%)		
Did I discuss why the demonstration should be given with local leaders beforehand?	<input type="checkbox"/>	<input type="checkbox"/>
Was this meeting definitely related to local problems and needs?	<input type="checkbox"/>	<input type="checkbox"/>
Was it designed to improve knowledge, skills, and attitudes?	<input type="checkbox"/>	<input type="checkbox"/>
Did I arrange in advance for local people who took part?	<input type="checkbox"/>	<input type="checkbox"/>
Was the community alerted to the problem and its solution?	<input type="checkbox"/>	<input type="checkbox"/>
Did I publicize the demonstration to the local community?	<input type="checkbox"/>	<input type="checkbox"/>
Was the meeting place suitable?	<input type="checkbox"/>	<input type="checkbox"/>
Was the demonstration done at a convenient time?	<input type="checkbox"/>	<input type="checkbox"/>
Were the materials and equipment available?	<input type="checkbox"/>	<input type="checkbox"/>
Conduct (50%)		
<i>Demonstrator</i>		
Was I at ease?	<input type="checkbox"/>	<input type="checkbox"/>
Was I familiar with my subject?	<input type="checkbox"/>	<input type="checkbox"/>
Was I skilled at doing what I was trying to teach?	<input type="checkbox"/>	<input type="checkbox"/>
<i>Physical Arrangement</i>		
Did I check all equipment to see if it would work properly?	<input type="checkbox"/>	<input type="checkbox"/>
Was my equipment arranged and adjusted to fit my subject and my audience?	<input type="checkbox"/>	<input type="checkbox"/>
Was the place suitable for this kind of demonstration?	<input type="checkbox"/>	<input type="checkbox"/>
Could the audience see and hear all parts of my demonstration?	<input type="checkbox"/>	<input type="checkbox"/>
<i>Presentation</i>		
Was it clear and divided into logical steps?	<input type="checkbox"/>	<input type="checkbox"/>
Did it convince my audience how easy it is to practice the skill I demonstrated?	<input type="checkbox"/>	<input type="checkbox"/>
Did the group participate through discussion or practice?	<input type="checkbox"/>	<input type="checkbox"/>
Results – (30%)		
Did a large percentage of people with the problem attend?	<input type="checkbox"/>	<input type="checkbox"/>
Did a large percentage of people attending indicate they would change their practices?	<input type="checkbox"/>	<input type="checkbox"/>
Were the demonstration activities reported to the community through news articles or other media?	<input type="checkbox"/>	<input type="checkbox"/>



Participatory training methods and techniques

Example of a planned demonstration to show how to transplant tomato plants

Materials needed

- tomato seedlings
- measuring stick 3 ft. long
- a flat stick about 6-8 inches long and pointed on one end
- a can of water

Steps	Key points
1. Mark place for each plant.	Draw a straight line in a prepared seedbed. Mark every 3 ft. along it. Use measuring stick.
2. Dig a hole.	At first mark. 3 inches deep. Use pointed stick.
3. Dig-out the seedling.	Moisten the soil. Cut around the plant in box (about 3-inch square). Use pointed stick.
4. Lift plant out.	Use pointed stick. Keep soil on roots.
5. Place plant in hole.	Be careful. Hold plant upright.
6. Pour water in hole.	Not more than cupful. Pour slowly.
7. Pick up handful of soil.	Should be fine. Work out any lumps.
8. Fill in hole.	Slowly. All around plant.
9. Firm soil around plant.	Fuse fingers all around plant.
10. Add more fine soil.	About 1/2 inch above surface to support plant.
11. Repeat at next mark.	
12. Shade all newly-set plants.	



Participatory training methods and techniques

■ 11. Workshop

As a training method, a workshop is an activity involving free discussion, exchange of ideas, practical application of skills and examples, and sometimes, demonstration of methods. Generally, in a workshop, a group of people with a common interest or problem, meet together for a period of time to improve their skills or to further their understanding of a concept.

A village or community workshop refers to a working meeting with the villagers intended to produce a specific output. The village workshop may provide a forum to use other training methods.

In other instances, an action-planning workshop is held to map out short- or long-term development plans. Depending on the purpose, a workshop can be held in the village or in a training hall or room.

Workshop purposes

Usually, a workshop is held to:

1. get inputs and views from as many people as possible; and
2. produce a specific output (e.g., action plan, resolution, completed exercise, etc.).

Workshop proper

1. Introduce yourself as workshop facilitator.
2. Let the workshop participants introduce themselves. You can organize a “getting acquainted” activity.
3. Discuss the workshop objectives.
4. Explain the workshop activities. Indicate what outputs are to be expected from the participants. Explain how the outputs will be used. Relate how the outputs can benefit the people concerned.
5. Give time for questions and clarification.



Participatory training methods and techniques

6. Conduct planned activities such as brainstorming, preparing matrix, holding group discussion, conducting exercises etc. If the group is too large, divide into smaller groups of participants as required for a specific method. Assign facilitators or ask participants to identify facilitators from the group.
7. If the outputs were prepared in small groups, let the groups share their results with the larger group.
8. Discuss the outputs with participants. Either help the participants interpret the results or explain the results to the participants.
9. Consolidate and analyze the outputs. As much as possible, involve the participants in the process.
10. Leave a copy of the outputs with the participants.
11. Encourage the participants to use the outputs as planned. If possible, validate the outputs.
12. Close the workshop. Thank the participants and organizers of the workshop.

Organizing a village workshop

1. Inform appropriate persons about the workshop.
2. Get permission, if necessary, to conduct the workshop in the village. Be sensitive to local protocol and customs.
3. Select a good site in the community. There should be enough room to perform planned activities.
4. Identify criteria for selecting participants to the workshop.
5. Request village leaders to help you identify suitable participants. The number of participants depends on your objectives.
6. Invite participants. Make sure nobody is forgotten.
7. Prepare workshop materials.
8. During workshop proper, define objectives and explain the purpose of the workshop.
10. Describe the activities to be undertaken in the workshop.
11. State the expected outputs from the workshop.



Participatory training methods and techniques

■ Tips for the workshop

- Make sure everybody participates.
- Don't let one individual dominate the workshop.
- Try to be diplomatic when dealing with dominant individuals.
- Make sure there is enough space for the groupings.
- Make sure there are enough facilitators.
- Work closely with your local counterpart.

Advantages of the workshop

- Provides an opportunity for applying other training methods.
- Encourages maximum participation.
- Allows the participants to share what they know and to practice their skills.
- Allows outsiders to gain insights regarding the dynamics and perspectives of the participants or community.
- Allows for immediate evaluation of outputs.

Disadvantages of the workshop

- Can be limited by the number of workshop groups.
- If held in the community, non-participants may easily walk in and out, causing disturbance to the session.
- There is less discussion of theory and principles.
- Some participants may tend to dominate the discussion.



Overview of session design

Duration

1 hour and 30 minutes

Description

Participants will analyze - through interactive and fun activities - the interrelationships between designing a session outline and training program.

Objectives

At the end of the session, participants should be able to:

- situate the session design within the training program; and
- enumerate the basic components of a session outline.

Learning aids and materials

- Mechanics of the "Puzzle Game" (Attachment 1)
- Checklist of components for the "Puzzle Game" (Attachment 2)
- Prepared colored metacards for each of the two group (to be used for the game); 9 pieces white for round 1; 8 pieces green for round 2; and 7 pieces yellow for round 3.
- Two pin boards
- Two small tables
- Additional colored metacards
- Score board
- Masking tape, permanent marker and white board markers
- Session handout



Overview of session design

■ Procedure

Activity 1: Game on components of training [45 minutes]

- Open the session by introducing the “puzzle game”.
- Divide the participants into two groups.
- Explain the mechanics of the game (see Attachment 1).
- Conduct the game rounds 1, 2 and 3.
- Affirm the winner by giving a round of applause.

Activity 2: Discussion on the links of various training component [45 minutes]

- Using all the outputs of the game, discuss with the participants the link between the training course design, training event and session outline.
- Focusing on the session outline, discuss with the group the relationship between the objectives and content areas; the categories of learning content; and the sequencing of the content and who determines the content (see Session handout).

Suggested reading materials



Nadler, Leonard. 1983. *Designing Training Programs: The Critical Events Model*. MA: Addison-Wesley Publishing Company.

NTUDC. 1996. *Laporan Pembuatan Kurikulum Agroforestry Untuk Petani Pemula, Madya dan Maju (A Report on Designing Agroforestry Curriculum for Beginner, Intermediate and Advanced Farmers)*.

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Werner, David and Bill Bower. 1982. *Helping Health Workers Learn*. CA: The Hesperian Foundation.



Overview of session design

Identifying the content areas

Given the previously formulated learning objectives, it is now possible to identify what must be learned to attain the said objectives. This is a list of the content areas containing the main topics, sub-topics and some details. The term syllabus is sometimes used to refer to this list.

Categories of the learning content

Why categorize the content? When the topics are written down, either in outline or in list form, we tend to give the same importance to each item. It should be noted that in relation to the learning objectives, the topics listed do not have equal weight. Some are more important, while others are less so.

It is necessary to develop priorities when identifying content areas. Frequently, we put more content than can be reasonably packed into the limited time available for the training. In our desire to be comprehensive, we tend to overload the syllabus with as much material as we could. Thus, participants are often frustrated about the "lack of time" allocated to deal with the subject matter, when in fact the real problem is that the trainer was very ambitious in trying to cover too much material.

We must choose what content areas to include and what to exclude; which ones to give more emphasis or less. This will help us determine how much time to allocate to a particular content area and the learning activities that go with it.

All possible content, in relation to the learning objectives, can be organized under four categories: essential, helpful, peripheral, and unrelated.

1. **Essential or "must know" material.** Under this category is the absolute minimum content if the learning experience is to meet the stated objectives. To determine if the material is essential, we simply ask the question, "can the learning objectives be attained if this material is not covered?" If the answer is "No", then it belongs here.



Overview of session design

- 2. **Helpful or "need to know" material.** The content supplementing the essential belongs to this category. Such supplementary material helps the learner accomplish the learning objectives more easily and efficiently. Although the essential content can stand by itself, the helpful material can also be included if conditions permit and there is sufficient time and resources to do it.
- 3. **Peripheral or "nice to know" material.** The learner does not exactly need the information under this category to accomplish the learning objectives. However, it can provide some insight or rationale that supports the expected learning outcomes. Inclusion or exclusion of peripheral content is the sole discretion of the training designer.
- 4. **Unrelated/extraneous or "no need to know" material.** Material within this category has no bearing on the attainment of the learning objectives, either directly or indirectly. Such materials are best disregarded since they would only distract the learners' attention from what is important.

Each of the learning objectives should be reflected in the content. Conversely, there should not be any element in the content that does not relate to the objectives.

Sequencing of the content

A closely related activity during this stage is sequencing or deciding in what order the content is to be presented during the training. There are no set rules, but there are several approaches which the designer can consider when sequencing the training content.

- 1. **General to specific.** The material is introduced with an overview, and then the content, moving through the specifics. This reflects the behavioral approach which theorizes that the learner needs to see the whole picture before he/she proceeds with the details.
- 2. **Specific to general.** The opposite of the above. This approach contends that the learner will reach the end result (the general picture) by going through a series of well-planned specific content areas.



Overview of session design

There are other variations in sequencing, but these are essentially based on the two examples above, such as known to unknown, particular to general, etc. The reverse order can also be used in each case.

There is no one way of sequencing that is best for all situations- the approach could vary depending on the content and the learner. Below is an example of an agroforestry training curriculum designed for "intermediate" farmers in Eastern Indonesia. The training content was sequenced differently-where the peripheral or "nice to know" material came first as introduction to the essential "must know" or core content of the training. The supporting content areas or "need to know" material was placed last.

1. **Basic/introductory material:**
 - soil and water conservation;
 - soil fertility management; and
 - diversification of farm enterprises.

2. **Core content areas:**
 - farm planning;
 - seed preparation/plant propagation;
 - cropping systems and management;
 - integrated pest management;
 - harvest and post-harvest technology; and
 - animal husbandry.

3. **Supporting content areas:**
 - marketing of farm produce;
 - management of household economy;
 - farmer-based experimentation; and
 - monitoring and evaluation of farm enterprise.

Who determines the content?

Training designers may or may not have the technical expertise in the training content. If we happen to have the competency in both training design and the particular content area, we can go ahead and make the syllabus. The process would be relatively easier and less complicated.



Overview of session design

- If we do not have the expertise in the content area, we can contribute in shaping the training curriculum where competence in the content is not required or expected. We should enlist the help of a subject matter specialist (SMS), who has the technical background or expertise in the content area. Such technical experts may be found within or outside the organization.

In the earlier stages of designing the curriculum, it is important to get the commitment of the SMS (or his/her supervisor) to ensure that they will devote time to this activity. The SMS will also be possibly involved in subsequent activities as needed, i.e., developing the training materials or in handling sessions during the actual training.

If SMS are from outside the organization, they may be hired as consultants. A frequently used group of people are professors from colleges or universities, specialists from research institutions or similar experts from other organizations involved in programs in the pertinent area. Resource persons may also be found from government line agencies.

In the latter case (external SMS), the relevant issues are finding the right persons for the job, ensuring their availability and having the budget to cover their fees. It is advantageous to keep a roster of such specialists and cultivate good relationships with them as we may need their services again in the future. Working with them on a training program may also lead to other fruitful and longer-term collaborative work.

Overview of session design



Attachment 1

OHT

Mechanics of the “Puzzle Game”

1. Each sub-group will do the puzzle game based on instruction sheets read by the facilitator in each of the 3 rounds of the game.
2. The game is a contest.
3. The groups will start only after the facilitator says, GO!
4. The winner is based on - (a) whoever finishes first (50%); (b) the number of correct answers; and (c) the most logical sequence of the cards in the puzzle as agreed by the whole group.
5. Using the score board, the facilitator does the scoring for the first to finish the number of correct answers and the most logical sequence of the cards for each round.
6. Each group will explain the logical sequencing of their puzzle. The whole group will then be asked if they agree.

Instruction Sheet - Round 1

1. Identify the basic components of a training course design.
2. Write the components in the given meta cards – one component, one card.
3. Post the completed cards in a logical sequence to the board.

Instruction Sheet - Round 2

1. Identify the basic component of a training event.
2. Write the components in the given meta cards. One component, one card.
3. Post each component in a logical sequence to the board.

Instruction Sheet - Round 3

1. Identify the basic components of a Session Outline.
2. Write these components in the given meta cards. One component, one card.
3. Post each component in a logical sequence on the pin board.



Overview of session design

Attachment 2

OHT

Checklist of components for the “Puzzle Game”

Round 1

Training program design (taken from page 1 of the handout on the session “Workshop on designing a training program”)

- | | |
|----------------------|-----------------------|
| 1. Title | 6. Training event |
| 2. Rationale | 7. Schedule |
| 3. Target group | 8. Resources required |
| 4. Program goal | 9. M&E plan |
| 5. Training strategy | |

Round 2

Training event (taken from the OHT Van Royen planning tool for the session on the “Framework for designing a training program”)

- | | |
|-----------------|--------------------------------|
| 1. Title | 5. Content/topics |
| 2. Participants | 6. Methods and techniques |
| 3. Description | 7. Organization and facilities |
| 4. Objectives | 8. M&E system |

Round 3

Session outline (taken from the format of the session guide of this resource book)

- | | |
|----------------|--------------------------------|
| 1. Title | 5. Learning aids and materials |
| 2. Duration | 6. Procedure |
| 3. Description | 7. Suggested reading materials |
| 4. Objectives | |

Preparing for session delivery



Duration

1 hour and 30 minutes

Description

The session is a continuation of the preceding overview of session design. Participants will experience the actual process of planning for a training session. The session will also introduce a framework from which trainees would view and practice formulation of training objectives and identifying content areas.



Objectives

At the end of the session, participants should be able to:

- list the preparations needed for session delivery;
- explain the basic components of a session outline focusing on learning objectives and content areas; and
- write a session outline on SA topic.

Learning aids and materials

- Newsprints and permanent markers
- Session handout, "Writing learning objectives"



Preparing for session delivery

■ Procedure

Activity 1: Sharing on preparing for session delivery [10 minutes]

- Ask the participants to share their own experience on how they prepare a session delivery. Summarize the discussions.

Activity 2: Discussion on learning objectives and content areas [20 minutes]

Distribute handout and discuss the following to the participants:

- concept of Behavioral Learning Objectives (BLOs);
- how to write BLOs and identify content areas;
- classification of objectives and content areas.

Activity 3: Exercises on learning objectives [1 hour]

- Using the outline in the handout, ask volunteers to post on the board an example of the learning objectives and corresponding content areas that they have made.
- As a brief review, ask the participants to answer the questions of exercise on BLOs (see attachment).
- As a synthesis, discuss with the group the characteristics of BLOs and the importance of using BLOs.

Suggested reading materials

Clark, Donald. May 28, 2000. "A Quick Guide to Writing Learning Objectives".
<<http://www.nwlink.com/~donclark/hrd/objectivetool.html>>

Kizlik, Bob. July 2002. "Definition of Behavioral Verbs for Learning Objectives".
<<http://www.adprima.com/verbs.html>>

McNamara, Curter. Undated. "Basic Guidelines (and example) for Writing Learning Objectives". <http://www.mapnp.org/library/trng_dev/lrn_objs.html>

Silberman, Mel assisted by Carol Auerbach. 1990. Active Training. Lexington Books.





Preparing for session delivery

Introduction

Whatever the trainer does should be relevant to the achievement of the desired behavior in the learner. The teaching materials and techniques are chosen to reach this end at reasonable costs. After deciding what we want the learner to be able to do and bearing in mind our budget, we choose the best trainers, the best information, the best training aids and the best methods and techniques which will enable the learner to acquire the desired performance or action effectively and efficiently.

In the past, we have not given our training schemes the best goals. Emphasis has been upon what we teach (contents) and how we teach (techniques). Little emphasis has been placed upon evidence of learning (behavior).

Specifying the outcome of a training means stating your objectives which are actually what you wish to achieve through training. Often, training objectives are confused with course content and course descriptions. Similarly, it is confused with what the instructor does in a course.

Any instruction that is given and anything that the trainer does is a means of assisting the learner to achieve an objective rather than being an objective itself. The trainer behavior is part of the learning plan.

Example:

1. To give each individual the opportunity to compare sustainable agriculture training efforts of their organization.
2. To communicate to farmers by making them more aware of their own attitudes.

Sometimes, statements found in the list of learning objectives are similar to these:

1. Participants take part in syndicate discussion of TNA methods and determine the most effective one.
2. Course members will form groups of three and each group will produce a training plan for one in-house training.



Preparing for session delivery

- Such statements describe the format, procedure and content of training which the learner will undergo. They may mention behavior which is expected of the learner but the behavior occurs during the training and is, in fact, called "course descriptions" rather than training objectives. To avoid confusion, some writers refer to training objectives as learning objectives. This reminds the trainer that the objectives he/she has to formulate must be directed to the learner.

Importance of using behavioral learning objectives

1. Consistency in the training design

They become the basis to ensure that the selection and use of all elements in the training program, trainers, trainees, materials, methods, etc. must be congruent and supportive of each other.

2. Effective communication

The trainer knows exactly what he is attempting to do and the learners in turn, know exactly what is expected of them in terms of behavior or performance as a result of training. Clear statement of objectives are useful to the trainer to develop means of checking on his and the trainees' performance.

3. Appropriate course content

Well-stated objectives provide a practical and objective means of determining the specific facts, principles, concepts and skills that must be included in a training program. This avoids focus on "nice to know" content areas.

4. Suitable training methods/strategy

If the trainer knows precisely what the learner must be able to do upon completion of the session, he can be more objective about selecting the methods which will accomplish the goal.

5. Clear cut trainer and learner goals

Both the trainer and the learner know precisely what is required of the learner after completion of the course. This gives the learner a sense of



Preparing for session delivery

direction and determines for himself/herself the progress he/she is making towards the attainment of the goal. It becomes in itself a motivation factor. The trainer in return is able to avoid gaps and unnecessary duplication, making the learning process more effective and efficient.

6. Basis for developing criterion measures

Valid tests are difficult to construct under any condition, but without well-stated objectives to serve as foundation, the validity of criterion tests and measures is likely to be questionable.

7. Go-no-go standards

Actions such as analysis of learner difficulties and provision of remedial intervention are easily and more objectively accomplished when there are well-stated objectives. If a learner is not able to mix the right consistency for a biochemical pesticide, he should not proceed to the next task of storing and properly handling them.

8. Objective evaluation of presentation

In trainer evaluation, training objectives are the basis for agreement between the evaluator and the one evaluated about what the trainer should accomplish. This permits objective evaluation of the presentation and acceptance by the trainer of the comments of his evaluator.

9. On-the-job evaluation of graduates of the training program

Well-stated objectives provide the basic standards for objectively evaluating effectiveness of the trainee in performing/carrying out the desired results of the training program either in the demonstration farm or in their own farms.

10. Requirements for on-the-job training program

Knowing the knowledge and skills a graduate of a training program brings to his job facilitates the development of realistic on-the-job application of learnings. Necessary support for him/her to apply learnings has to be identified in advance whether these are in the form of seeds, demonstration area or a technician.



Preparing for session delivery

■ Definition

Learning objective is a statement of intent about what the learners will be able to do after going through a learning process or it is a statement of expected learning outcome/s for a given trainee who will go through a learning process.

How is a learning objective written?

A learning objective has to be specific. It has to specify the desired learning outcome/s expected of a trainee when he/she goes through the learning process. It has to be specific so that no, or at least very little ambiguity exists in both the validation and the assessment. To reduce its ambiguity, it should contain three (3) components.

1. **Activity component describes what the learners will do - it must contain an action verb.**

The performance/activity component may be expressed in two ways:

- a) Stating the main intent
- b) Stating the indicator for the main intent

Draw a circle around the explicit performance, if any, mentioned in the following statements:

1. Be able to list the tools and materials needed for preparing a bio-extract (BE).
2. Be able to demonstrate an understanding of gender equity.
3. Be able to mix ingredients for green manuring.
4. Be able to show knowledge of the basic elements of a training design.

Example of a performance/activity component expressed as the main intent:

Given castration equipments and tools the trainee must be able *to perform castration* on any breed of cattle.



Preparing for session delivery

Example of a performance/activity component expressed as indicator for the main intent:

Given drawings of a sustainable and unsustainable farming practice, be able to color all sustainable practices.

In the second example “to color” as activity component of the objective is an indicator of the learners ability to differentiate between sustainable and unsustainable farming practices.

Circle the performance stated and check the appropriate column on the right.

Sample of learning objectives	Main Intent	Indicator
1. Be able to identify good seeds		
2. Be able to circle from a series, drawing vegetables with high Vitamin A content		
3. Given seeds in plastic sachet, be able to mark those that are good seeds		
4. Given 3 plots and guidelines for bio-intensive gardening, be able to evaluate a productive vegetable plot		

For objectives containing an indicator - test the indicator.

Is this the simplest and most direct I can find?

Demonstrate the difference between sustainable and unsustainable farming practices by writing an essay about them.

What is the performance?

What is the main intent?

How can we know that the main intent can be done? Is achieved?

Is this the best way of achieving the main intent?

In the example above, writing an essay about sustainable and unsustainable farming practices is not the best way to demonstrate and see their differences. Practicing them in two different plots would be most appropriate.



Preparing for session delivery

2. Condition component

Describes the condition/s which the activity will be carried out. This is done by stating what materials are made available or not made available to the learner, what information maybe provided to the learner, the length of time he/she has to perform a task, assistance available.

3. Criterion/standard component

Describes how well the learner must be able to do the activity.

There are several ways of doing this:

- a) Speed/time (15 minutes, a day, etc.)
- b) Percentage of number to be achieved (80%, 8 out of 10)
- c) Reference to other material which identified specific criteria (following the characteristics of a good double dug soil bed)
- d) Maximum number of errors
- e) Degree of excellence (A-frame that stands vertically on its own in a given slope)
- f) Any combination of these criteria

Criteria may be omitted completely when:

1. the quality of performance does not depend on the worker (as in automated production)
2. it is not essential for success in the job
3. the requirements vary with work conditions

Classification of learning objectives

The following table gives a list of verbs for each of the 3 domains and for each category with the cognitive domain. Although the verbs are indicators of the level of learning which is required, it is difficult to take them out of context. Some of the verbs appear in more than one of the categories (i.e., "uses" could be application in the cognitive domain or could be in the psychomotor domain, depending upon the context).

The sample learning objectives amplify the use of these verbs.

Preparing for session delivery



Cognitive domain	Illustrative verbs	Sample activity component of learning objectives
Knowledge	define, describe, identify label, list, name, state, underline, etc.	Define the term "development". State the relationship between sustainable agriculture and environment.
Comprehension	calculate, compare, discuss, distinguish, draw, explain in own words, give examples, predicts, translates, solve, etc.	Give 2 examples of issues. Illustrate the framework for rural reconstruction. Explain the meaning of sustainable agriculture in own words.
Application	derives, break down, predicts, relates, shows, uses, etc.	Use the overhead projector correctly. Relates the concept of poverty to what is happening in the community.
Analysis } Synthesis } Evaluation }	appraises, breaks down, categorizes, creates, criticizes, designs, plans	Assess the advantage of people-centered development vs. top-bottom development. Design a new procedure for analyzing training needs (synthesis).
Affective domain		
Appreciates	chooses, organizes, participates, responds, completes	Chooses activities which promote sustainability.
Psychomotor domain		
Shows skills in	assembles, builds, calibrates, cleans, connects, constructs, creates, connects, constructs, creates, designs, dismantles, drills, fastens, fixes, follows, grinds, hammers, heats, identifies, locates, makes, manipulates, mends, mixes, sprays, stores, soaks, etc.	Writes learning objectives. Gathers information from farmers. Facilitates discussion on participatory technology development. Construct an A-frame.



Preparing for session delivery

■ A. Affective domain objectives

The affective objectives are those in which the trainer endeavors to have his students learn something and develop a feeling for what he is learning. These include:

- Appreciation
- Feelings
- Values
- Attitudes

Some affective behavior (overt) can be observed, while some are internalized and cannot be seen (covert). The latter type can be assessed by indirectly asking the learner his/her values, satisfactions, appreciations, attitudes, etc., about what is being learned by setting up a situation in order to observe behaviors (perhaps cognitive domain behaviors), which is indicative of values, appreciations, etc. For instance, if good interpersonal relationships are to be learned, it is necessary to get learners to "appreciate" these values. It is possible to observe whether this appreciation is taking place by the acts that a learner carries out, i.e., never shut out a person during conversations, gives praises at the right time, listens actively to those around him/her, etc.

Sample affective domain objectives

- Initiate group action dealing with pollution problems such as organizing a working committee to determine and publicize sources of pollution.
- Choose activities which support sustainability of agriculture programs
- Discuss with the groups the need for considering contributions from every team member in any discussion.

B. Psychomotor domain objectives

The objectives in this domain describe the learner's ability to physically do some tasks. Objectives in this domain should be limited to tasks where bodily movements are taught, i.e., use of specialized equipment for soil analysis, filleting fish, mixing liquid fertilizer, preparing oral solution, spraying bio-chemical pesticides, etc.

Preparing for session delivery



Sample psychomotor domain objectives

- Given soil samples and soil testing kit, the farmers will determine the percentage of nitrogen, phosphorus and potassium content.
- Given animal manure, participants will be able to incorporate them correctly in the prepared soil beds.

C. Cognitive domain objectives

These are learning outcomes expected of the trainee which have something to do with his/her intellectual skills. Ability to recall facts,

Examples of behavioral terms in the three domains	
Cognitive domain	Appraises, breaks down, changes, computes, categories, combines, complies, creates, compares, concludes, contrasts, converts, criticizes, defines, demonstrates, discovers, differentiates, discriminates, distinguishes, devises, designs, describes, estimates, explains, extends, gives examples, generalizes, generates, identifies, illustrates, infers, interprets, justifies, labels, lists, matches, manipulates, modifies, names, operates, outlines, organizes, paraphrases, plans, predicts, prepares, produces, points out, reproduces, relates, rearranges, reconstructs, recognizes, revises, selects, states, separates, sub-divides, supports, shows, solves, tells, writes.
Affective domain	Asks, assist, adheres, alters, arranges, acts, chooses, complies, conforms, combines, compares, completes, describes, discusses, differentiates, depends, discriminates, displays, explains, follows, forms, gives, greets, generalizes, holds, helps, identified, initiates, integrates, influences, joins, justifies, locates, labels, listens, modifies, names, orders, organizes, points to, performs, practices, prepares, proposes, presents, qualifies, questions, replies, reads, recites, reports, relates, revises, selects, sits, elects, shares, studies, synthesizes, serves, solves, tells, uses, verifies, writes, words.
Psychomotor domain	Assembles, builds, calibrates, changes, cleans, composes, connects, constructs, corrects, cuts, creates, designs, dismantles, drains, fastens, fixes, follows, locates, makes, manipulates, mends, mixes, stirs, uses, weighs, wraps, digs, trims, sprays, picks, nips, soaks, waters, weeds, etc.



Preparing for session delivery

- understand and apply them without using physical skills is cognitive in nature.

Sample cognitive domain objectives

- Solve 5 problems using the 4 fundamental operations without error.
- Discuss all the elements of a training course design.

Hierarchy of objectives

Cognitive domain

- Level 1 - Remembering facts
- Level 2 - Comprehending the meaning of facts
- Level 3 - Applying what is remembered
- Level 4 - Analyzing content and form: this is the breaking own process.
The parts are identified, the relationship between the parts recognized, and the way in which the whole is organized is understood.
- Level 5 - Synthesizing a new whole from the parts: this is creative process-producing something new, something unique (however simple).
- Level 6 - Judging the value or worth of something.

Affective domain

- Level 1 - Passive: paying attention; receiving a signal (such as listening, but not only through sense of hearing).
- Level 2 - Active: paying attention to and then responding to a value.
- Level 3 - Applying what is remembered
- Level 4 - Valuing: attending to, responding to, and accepting the worth of something, and acting upon the decision.
- Level 5 - Behaving consistently: according to a well-established set of values. Well-adjusted personally, socially and emotionally, and committed to a set of values.

Preparing for session delivery



Psychomotor domain

- Level 1 - Identifying: using the sensory organs to guide motor activity, choosing, identifying, differentiating, distinguishing, etc.
- Level 2 - Responding: taking action on the basis of identifying. Moving, displaying, showing, starting, volunteering, etc.
- Level 3 - Imitating: copying an action performed by another. Assembling, measuring, fastening, mixing, using/operating OHP, etc.
- Level 4 - Experiencing: forming habits, carrying out previously imitated actions with competence and proficiency.
- Level 5 - Performing expertly: developing highly coordinated psychomotor skills.
- Level 6 - Originating: creating new movements to solve a problem.

Preparing for session delivery



Attachment 1

Exercise in developing behavioral learning objectives

Instruction

Trainees will correct the following learning objectives based on the input given by trainer.

Exercise A: (actor, behavior)

1. An instructor should be able to appreciate.
2. The trainee will be able to list the advantages of clear objectives.
3. The learner will be able to construct the A-frame correctly.
4. The trainee must concentrate on his studies during 90% of his time.
5. The learner understands the principles of sustainable agriculture.

Exercise B: (actor, behavior, condition)

1. The learner should be able to describe at least one practical gender need and one strategic gender need.
2. Of the given 20 definitions of objectives, the instructor-candidate should be able to identify 10 correct ones.
3. Using the tools for forming soil beds, the trainee should be able to make a 4' x 4' soil bed in the practicum garden.
4. With the help of the operation manual, the learner will be able to set up any standard movie projector for showing film.
5. On completion of his study, the instructor will be able to list in his/her own words the main steps in developing training materials.

Exercise C: Recognizing behavioral training objectives

1. Participants should be able to understand the basic concepts and principles of coastal resource management.
2. Participants should discuss the relevance of coastal resource management in environmental conservation.
3. The participants were able to share the experiences on how such problems, issues were handled by the organizations and project implementors.
4. Participants were able to prepare re-entry plans for implementation in their respective farms. These plans should feature at least 8 of the 10 technologies discussed during the course.

Facilitation and delivery techniques



Duration

1 hour and 50 minutes

Description

Facilitation skills are very important in participatory training. Good facilitation does not have a recipe. However, there are helpful tips and do's and don'ts for trainers. One learns good facilitation through practice. Asking questions is an important aspect of facilitation and will be exercised in this session.

Objectives

At the end of the session, the participants should be able to:

- enumerate the roles of a good facilitator;
- enumerate the characteristics and skills required to be a good facilitator;
- explain the importance of asking questions in facilitation; and
- facilitate a mini-session.

Learning aids and materials

- Code for group discussion (Attachment 2); Instruction sheets for facilitator and for the group participants (Attachments 1 and 3)
- Session handout: "Facilitation skills"
- Newsprint and permanent markers



Facilitation and delivery techniques

■ Procedure

Activity 1: Interactive lecture on the roles of facilitator [20 minutes]

- Discuss in plenary, the roles performed and skills required by a trainer who acts as a facilitator.

Activity 2: Workshop on facilitating a “mini session” [1 hour and 30 minutes]

- Form four small groups. Ask each group to choose a facilitator.
- Ask all the facilitators to come together. Give each of them the instruction sheet for facilitator (Attachments 1 and 2) and other group members the instruction sheet for participants (Attachment 3). Give them 5-10 minutes to prepare.
- Ask the facilitators to return to their respective groups to start on the mini-session.
- In plenary, participants are asked to feed back what they felt were the do's and don't's of good facilitation.



Suggested reading materials

- Cameron, Esther. 1998. Facilitation Made Easy. Kogan Page Limited.
- Eitington, E. Julius. 1996. The Winning Trainer. 3rd Edition, Gulf Publishing Company, Houston, Texas.
- Pretty, J. N. et al. 1995. Participatory Learning and Action: A trainers' guide. IIED, 3 Endsleigh Street, London, UK.
- VSO, IIRR and PEPE. 1998. Creative Training. A User's Guide. IIRR, Silang, Cavite, Philippines.



Facilitation and delivery techniques

Facilitation skills

A facilitator is someone who helps learners move along a process of joint learning whereby participants interact with each other, gain new information and build upon their experiences.

In the context of rural development this means:

- promoting dialogue and openness to encourage learning among participants;
- diagnosing problems together with the participants;
- engaging in problem-solving with the participants;
- enabling a search for and experimentation with alternative solutions; and
- promoting group and individual decision making and planning for action.

To play these roles, he/she requires skills like:

- listening - ability to listen carefully, picking out both positive aspects and problems and tensions;
- observation - ability to pick up information from non-verbal clues;
- empathy - ability to see problems through the eyes of participants, to detect and understand their feelings and values;
- encouragement - ability to build confidence in participants, affirming their positive work, helping to address negative parts;
- helpful questioning - ability to ask questions that enable participants to think through causes of problems, the consequences of actions, etc;
- summarizing/structuring - ability to summarize information generated by participants, pick out main issues and develop concepts and simple models with them;
- timing - sense of when to encourage, when to challenge, when to ask questions, when to summarize and when to give suggestions;
- planning - insight on how to plan the learning process, how to organize learning situations in a good sequence;



Facilitation and delivery techniques

- flexibility - ability to go beyond planning, be open for creativity and experimentation; and
- openness/self-reflection - ability to accept feedback from participants and be prepared to examine own values and ideas.

The qualities of a GOOD facilitator are:

- keeps the group focused on task and process;
- remains objective;
- is an informed guide, helping the group to chart its course and accomplish its goals;
- listens more, than talks;
- adapts to the various learning styles;
- encourages everyone to participate;
- protects members of the group from attack by the others;
- is gender and culture sensitive;
- is time conscious;
- considers the groups' energy level;
- recaps occasionally and helps the group to make connections with other sessions
- is humble;
- alive; and
- non-threatening.

The factors affecting facilitation are the:

- environment where it takes place;
- techniques used;
- time available;
- topic;
- degree of structure (open, pre-determined); and
- preparation.

Facilitation and delivery techniques



Remember that the purpose of questions is to:

- call attention to a point, an idea, a fact;
- evaluate opinions;
- get at causes or facts;
- uncover sources of information;
- control discussion;
- summarize or end a discussion;
- call attention to another phase of the problem or discussion;
- reach a conclusion or agreement;
- change a group thinking;
- control group behaviour; and
- suggest action, idea or decision.

Facilitation and delivery techniques



Attachment 1

Instruction sheet for facilitator

1. For a period of one hour, you are tasked to facilitate your group using a discussion tool call "Code". This is an aid in the form of a poster, poem or short story that helps trigger a discussion (see Attachment two).
2. In using the attached code, you may follow the steps and guide questions in order to stimulate thinking about how to solve the problem shown by the code:
 1. **Description:** What happened? What did you see, hear, feel?
 2. **First analysis:** Why did this happen?
 3. **Link to real, own life:** Does this happen to us? Do we have similar experiences?
 4. **Related problems:** What problems does this lead to?
 5. **Action, solutions:** What can be done, what are alternatives?

Facilitation and delivery techniques



Attachment 2

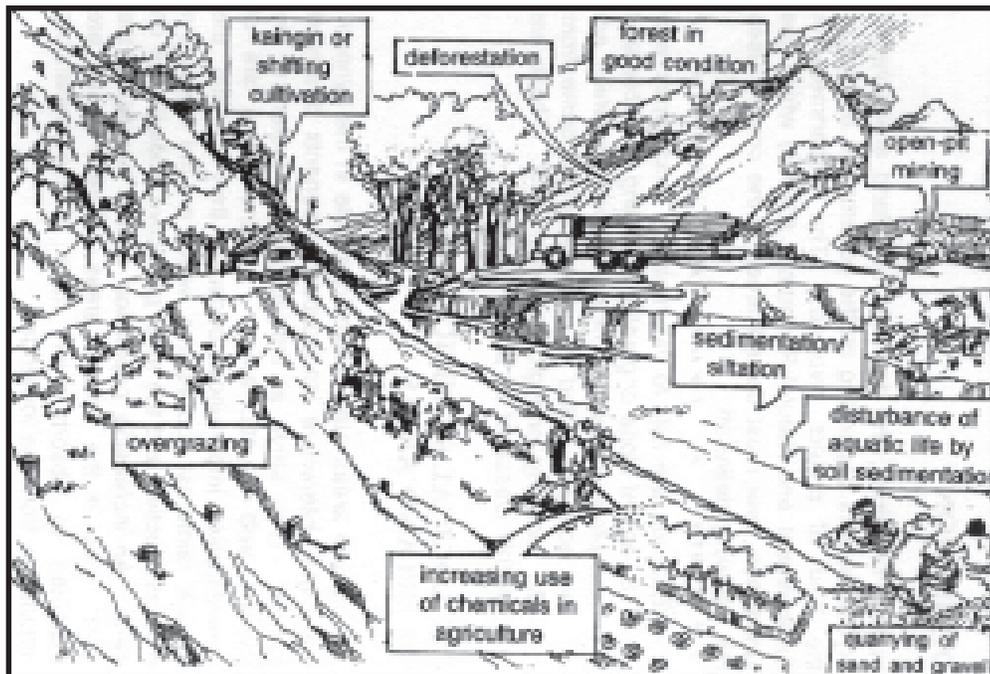
OHT

CODES

Codes are concrete presentations of an issue or problem familiar to all, about which the participants have strong feelings.

Codes can take many forms: a drawing, drama, slides, posters, (part of) a video.

Codes are used to encourage participants to open up on sensitive issues, and change previously fixed opinions and ideas. Use of codes contributes to a deeper change of attitude.



Facilitation and delivery techniques



Attachment 3

Instruction sheet for the participants

Your selected facilitator will engage your group in a discussion using a discussion tool called “Code”. This is an aid in the form of a poster, poem or short story that helps trigger a discussion (see Attachment two).

Aside from getting involved in the discussion, you are likewise tasked to observe the following:

- What do you like in the way the facilitator handles a group discussion?
- What do you not like in what he/she does in facilitating the group discussion?



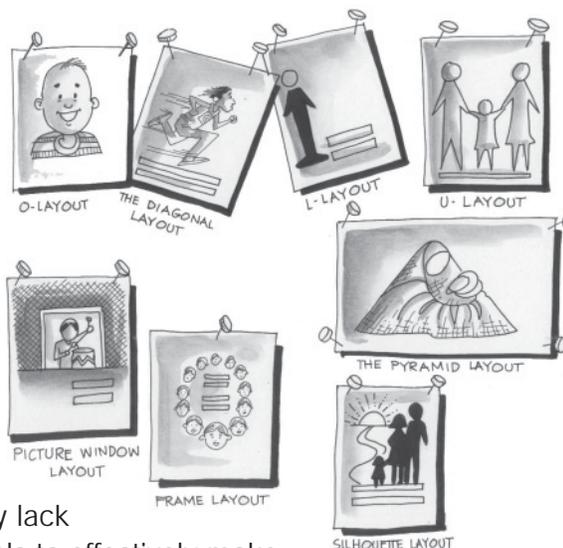
Developing and using selected training materials

Duration

4 hours

Description

One of the challenges usually faced by trainers is coming up with an effective visual aid to maximize learning. In most cases, trainers are very knowledgeable on the subject matter to be presented, but may lack the skill to use the visual materials to effectively make a presentation.



This session deals with the importance and practical uses of the different types of training materials or visual aids. Guidelines, principles and processes involved in developing effective training materials are emphasized. Practical tips are also provided to maximize their use and application. Participants are also given the opportunity to apply concepts learned in a mini-workshop towards the end of the session.

Objectives

At the end of the session, the participants should be able to:

- differentiate the various types of training materials according to importance and uses;
- design and produce a prototype visual aid (i.e., flipchart, poster, transparency, Powerpoint presentation, etc.) that can be used for a 15-minute presentation, applying the principles and concepts of visual design; and
- discuss practical tips and techniques in using these visual aids.



Developing and using selected training materials

■ Learning aids and materials

- Handouts: “Guidelines for Developing and Using Training Materials”
- OHTs: “Principles of visual design” and “Visual tools and Elements in learning aids”
- Samples of visual aids (posters, transparencies, slides, flipchart, etc.)
- Permanent markers, crayons, pencils
- Slides and slide projector (if available)

Procedure

Activity 1: Introduction [20 minutes]

- Ask the participants what types of training materials or visual aids they have used before when conducting training sessions. Ask the participants to write these in metacards and post them on the board.
- Form buzz groups to differentiate these training materials or visual aids, focusing on each type’s use and importance. These are noted and shared by the buzz groups in the plenary. Take note of key words and write them on the board. Group the outputs and proceed to discuss them.

Activity 2: Principles of visual design [1 hour and 40 minutes]

- Show the participants different examples of visual aids (posters, flipcharts, electronic presentation, OHTs, slide presentation, etc.). In groups, ask the participants to identify which of these materials they consider as good learning aids for use in SA training and why. List down the reasons generated and discuss in plenary.
- Summarize the contributions of the groups, relating them to the principles of good visual design. Show examples of each design principles to the participants.
- Direct participants’ attention to the materials that were not chosen as good learning aids. Given the principles of good visual design, ask the participants’ recommendations to improve them.

TIP



You can use the following lead questions to initiate discussion:

- What were the steps in creative thinking that took place?
- How did it start and eventually become what it is now?

Developing and using selected training materials



- Taking the visuals the participants considered as good, ask the group what visual tools were used to design these materials. Discuss these tools (i.e. shape, space, line, texture and color).
- After the discussion on visual tools, ask the participants how they think the designer conceptualized these materials.

Activity 3: Workshop on designing training materials [2 hours]

- Ask the participants to design and prepare a visual aid that they can use in a 15-minute presentation of any topic in SA, or on any topic they feel comfortable presenting.
- Post the produced materials where everyone can see them. Ask the participants to critique each output. Note down key comments. These will be used later in the summary of key lessons or points of learning for the session.
- Discuss key techniques in using posters and presenting transparencies. Elicit these techniques from the participants' experiences in using these learning aids.
- Summarize key learning points and open the floor for further clarification on the subject.



Suggested reading materials

VSO, IIRR and PEPE. 1998. *Creative Training: A User's Guide*. Voluntary Service Overseas, Quezon City, Philippines; International Institute of Rural Reconstruction, Silang, Cavite, Philippines; and Popular Education for People's Empowerment, Quezon City, Philippines.

Ockelford, Jane B. March 1995. *Partners in Creative Training: Training of Trainers in Cambodia*. PACT Cambodia. Publishing, London

Selener, D., J. Chenier, R. Zelaya, et. al. 1997. *Farmer-to Farmer Extension: Lessons from the Field*. IIRR: New York.



Developing and using selected training materials

Introduction

Creative thinking is one of the skills every trainer should have. They should not run out of ideas for making learning simpler and more enjoyable.

The success of training materials can be attributed largely to the quality and effectiveness of the pictures, artwork and related graphic design. These are achieved through preliminary thoughts, careful planning and applying visual design principles and visual tools.



Luckily, nowadays, it is not necessary to have a professional artwork background in developing effective training materials. The following are few guiding principles to achieve professional results.

Classification of training materials

Generally, training materials can be classified as written, audio or visual. They can be paper-based, electronic, film-based or real objects. The best training materials are those represented by real objects. We use training materials to aid the learning process. This paper focuses on developing four specific visual aids: posters, wall charts, flipcharts and transparencies – as these are the ones commonly used in sustainable agriculture training and prepared by trainers themselves.

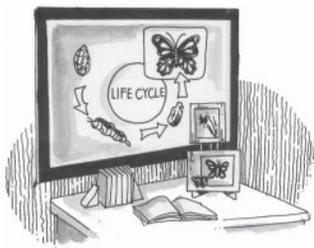
Why use audio-visual aids?

Audio visual aids make our presentation more interesting. They help in message retention. They can stimulate action and increase learners' understanding of the subject matter. A message conveyed through a thousand words can easily be caught in one visual aid.

Materials should be built around one idea, a few easily understood visuals and minimum words which are carefully arranged. While mastery of



Developing and using selected training materials



design principles and visual tools provides great help in creating effective materials, planning for your materials is still the most important step in materials production. A well-planned layout may make up for weak lettering, artwork or pictures. However, good lettering, artwork or pictures will not save a weak layout.

What is a poster?

A poster is a large piece of paper with brief visual information and usually affixed on a wall, fence or board. It seeks to communicate information, motivate or inspire and encourage action in a manner that:

- attracts attention;
- emphasizes the most important points;
- reads easily; and
- looks pleasing.

A good poster puts people in a favorable mood to accept a new idea.

Advantages of using posters

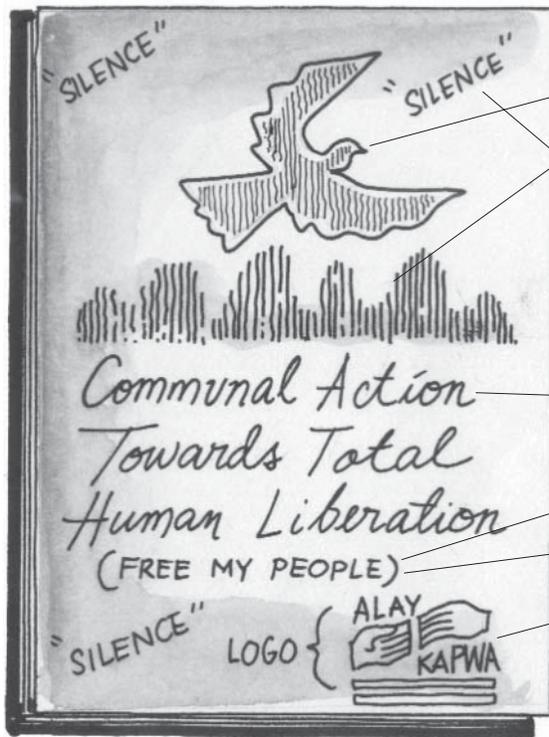
- **Poster can command attention.** To do this, it must be of adequate size, with appropriate visual appeal and placed at the proper locations.
- **Posters are reusable.** Depending on materials used, posters can be reused
- **Posters are easy to carry.** They do not need special equipment or devices to be used effectively used.
- **Posters are easy to use.** One does not need special skills to use them.
- **Posters are easy to produce.** A set of pen, paper and cut out materials can make a good poster.





Developing and using selected training materials

Components of an effective poster



1. The Pictorial Elements
 - Major illustration
 - Secondary or amplifying illustration (optional)
 - Logo sign for rapid identification
 - White spaces or "silence"
 - Color accent

2. The Words Elements
 - Headline or the statement of the problem or the theme
 - Secondary or amplifying statement
 - Command or "call to action"
 - Name of sponsor

Planning your poster

- **Identify your target viewers**
List as many facts as you can about the audience, especially the amount of information already in their possession and their attitude towards the chosen topic. The more you know about your target viewers, the more likely you will come up with a poster design suiting their taste and generate interest.

- **Formulate your objectives**
What is the purpose of your poster? What is the message you want to convey? What reaction do you want from your viewers?



Developing and using selected training materials

- **Identify the context in which the poster will be used**
Is it for a class or small group discussion? Is it for mobilizing action? The context of using your poster will help you decide on the size, location and duration of posting.
- **State your message**
Your message may take the form of command, question, positive statement, suggestion or news. The caption or headline should catch the viewer's attention and arouse interest. It should be short, catchy and easy to remember. Use present tense. Use short and strong words. Omit non-essential articles like a and the and parts of the verb to be. Economize on words.

Executing the plan

Effective posters may be designed with words only and clever caption will often be remembered. However, the viewers' attention is usually caught by the illustration and well chosen visuals often help in recalling the poster's message.

- **The picture or illustration**
The picture must convey the same message as the word. Choose the style easily understood by your audience.
- **The layout**
Layouting is the careful arrangement of different poster elements to achieve the desired effect. There are endless possibilities for poster layouts.
- **Execute the final artwork**
You can do this if you are an artist or you can have a professional artist do it for you.
- **Pre-test**
It is important to find out how your audience would react to your poster. Identify a focus group for pre-testing. Your focus group should have the characteristics of the target audience.



Developing and using selected training materials

Practical tips in pre-testing your posters

1. View your poster from a distance of about 10 meters. Can you see the message early?



3. Ask your colleagues to look at the poster and ask for feedback.



2. Put it in a prominent place and observe how long people stop and look at it. This is a test whether it can attract attention.



4. Pre-test with the selected target audience to see if it encourages some response and action.



- Revise, reproduce and distribute.



Developing and using selected training materials

■ Using the poster as learning aid

Display the poster before a group. Let the group read the poster carefully then proceed to ask the following questions:

1. What do you see in the poster? What does it remind you of? This is an objective analysis of the poster)
2. What does the poster do to you? This is to find out the immediate impact of the poster;
3. Who is addressing us in this poster? What are they saying to us? This is to lead the discussion towards the main theme of the poster;
4. Is this message still relevant today?
5. Have you had a personal experience similar to this? This relates the experience presented in the poster to the learners' personal experiences; and
6. What do we need to change as a response to the poster's message? Why do we need to change? This refers to the resulting effect of the message to the audience.



What is a wall chart?

A wall chart is a large piece of paper with much more visual information than a poster. It is used to summarize otherwise large text, indicate a logical sequence, time lines, processes, relationships or patterns. It can be designed as graphs, calendars, tables, collages or maps. A good wall chart

- Summarizes ideas
- Provides a logical framework
- Enhances analysis by training participants
- Reads easily
- Looks pleasing



Developing and using selected training materials

Advantages of using wall charts

- Enhances understanding
- Summarizes large text
- Easy to carry
- Easy to use
- Easy to produce
- Can be produced through spontaneous exchange of ideas in a training session
- If produced electronically, can be used in OHT and Powerpoint presentation

How to develop wall charts

- State your objectives
- Identify key elements that need to be compressed
- Organize contents
- Determine format to use - i.e. graphs/maps
- Prepare draft for pre-testing
- Pretest, improve and use

What is a flip chart?

The flip chart is a series of different charts on related subject matter, arranged in the definite sequence and bound together at the top.

An effective flipchart:

- facilitates a comprehensive, logical and systematic presentation of a topic.
- presents in a step-by-step sequence or detailed instruction and procedures.
- delivers a theme or message to a group of 2-20 people.
- serves as a means of pre-testing possible alternatives for action.

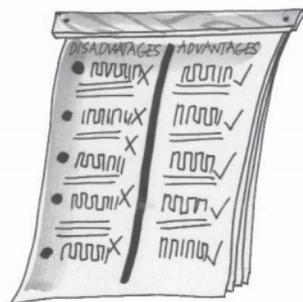


Developing and using selected training materials

Types of flip charts

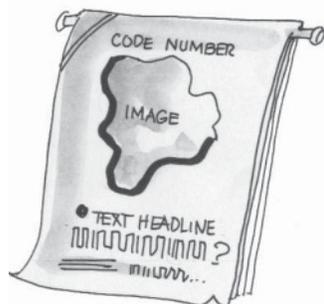
1. Newsprint flip chart

This is a compilation of newsprint sheets that can be fixed on a flip chart stand. It can be used as a blackboard and can also be used to present a small group's work to other learners. It can help formulate ideas from brain-storming sessions or from the general course of a training session. This type of flip chart tend to become visual notes, but they support participatory training methods.



2. Prepared flip chart or hand drawn flip charts

These are prepared before its actual use. Use simple hand drawn visuals or stick on photocopies of images or clip arts if one does not know how to draw. Always remember to avoid too much information in each chart. Divide the subjects to simple, separate points for each chart.



3. Printed flip charts

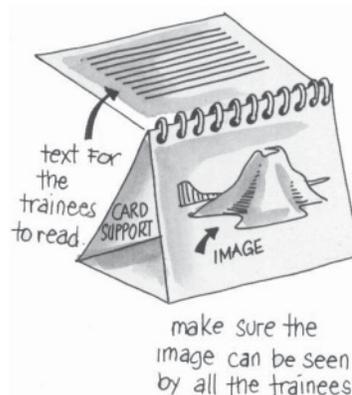
These are either commercially available or have been distributed to spread a specific message.

Both the hand drawn and printed flip charts can be done in fabric or cloth. These materials survive longer than paper. They will be easy to carry and will not need a special stand



4. Flip books

These are made with cardboard stands and with ring or wire binding. These are done with special binders to freely and quickly flip over each chart. These can have printed instructions for the trainers and illustrations for the trainees. This format is ideal for a small group of 6 to 10 people.



Developing and using selected training materials



Advantages of using flip charts

- Flip charts can be prepared and designed ahead of time. It facilitates the trainer's organization of ideas during the presentation.
- It can use the graphic forms possible.
- It can be used, reviewed and displayed in different ways.
- Newsprint flip charts can facilitate participatory training methods - developing and recording the work and outputs during the session.
- It is portable and does not require electricity.
- It is low-cost and can be prepared in the villages and by the villagers themselves.

Limitations of using flip charts

- Requires skills and time in preparation.
- Compared to chalk board, a flip chart has a smaller area to work on.
- Compared to chalkboard, they still cost more as you need pens, paper, board.
- It limits the spontaneous exchange of ideas.

How to develop flip charts

1. State your objectives (s).
2. Identify your target audience.
3. Select the type of flip chart.

Consider the following:

- time;
- resources;
- frequency of usage; and
- nature of topic.



Evaluation questions:



1. Did the chart attract attention?
2. Was the content appropriate to the audience and the objectives?
3. Was the content organized in logical, easy to understand manner?
4. Were the words and illustrations understood by the audience?
5. Did the chart help meet the objectives?



Developing and using selected training materials

- 4. Organize your message:
 - write the content;
 - Simplify the message; and
 - Sequence the idea.
 - logical;
 - systematic; and
 - step-by-step.
5. Prepare the “thumb nail” sketch for the chart. Convey one idea per chart.
6. Produce, pre-test, revise, reproduce and use.



Using the flip chart

1. Before the presentation
 - Study the charts carefully to establish the linking theme. Study the general pattern to ensure smooth and logical presentation of the message.
 - Note the key points in each chart which will be the first natural focus of your audience.
 - Practice.
2. During the presentation
 - Introduce yourself and your topic.
 - Place the chart in a place visible to your audience.
 - Always provide a transitory explanation before showing the next chart.
 - Be sensitive to any reaction from the audience.
3. After the presentation
 - Ask their reaction and suggestions to improve the flip charts.
 - Ask for further questions and clarifications.
 - Thank your audience.

Developing and using selected training materials



Using a transparency

Transparencies follow the basic guidelines in preparing visuals. A good transparency is made from good quality materials. It contains brief and easy to understand information. Its content and graphics if any, should be consistent.

Advantages of using transparency

- The trainer controls the presentation.
- It can be used in a well lighted room.
- It is good for both small and large group.
- It requires only minimum operational skill for overhead projection.
- It provides a more accurate graphical illustrations.
- It saves valuable time.
- It presents more meaningful information.
- It can simplify the presentation.
- It can instill interest in the subject.
- The trainer can be certain of eye contact with the trainees.

How to develop transparency

- Use large enough font (minimum font size of 20 points) in the OHT
- Use keywords; avoid long sentences
- Keep one idea per OHT
- Add color, figure, cartoons, illustration to break monotony

Some tips on using the overhead projector

1. Preview materials before using.
2. Set-up projector/equipment for necessary adjustment of image on the screen/monitor.
3. Check the trainees' seating arrangement.





Developing and using selected training materials

4. Check lighting and ventilation.
5. Prepare the audience before presenting, pause and make the necessary explanation if needed.
6. Do not leave the projector light ON if nothing is projected.
7. Do not move the projector while lamp is ON or has not cooled sufficiently to protect the lamp.
8. Leave the projector in fan position to cool down the equipment before putting it OFF.
9. Point on the projector not the screen.
10. Organize the transparencies before the presentation.
11. Avoid blocking the participants while making your presentation.

Developing and using selected training materials



Attachment 1

OHT

Principles of visual design

Good training aids are simple, flexible, timely, visible, original and colorful. To achieve this effect, the following design principles should guide trainers in developing their training aids.

Proportion is the relationship of the width to the height.

Simplicity is limiting your design to one idea at a time.

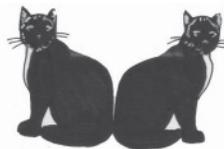
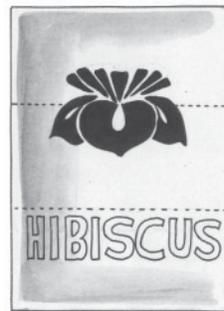
Balance is the relationship between the various parts of the visual design. There are two kinds of balance:

- Formal balance
- Informal balance

Unity and harmony is the binding power that keeps the component elements in a visual together.

Emphasis is ensuring that the center of visual interest and attention stand out.

Pattern is arranging of the various parts of visual materials should be arranged in a pleasing way.



Developing and using selected training materials



Attachment 2

OHT

Visual tools and elements in learning aids

Shape, space, line, texture and color are visual tools that help create an effective visual design.

Shape represents certain qualities.

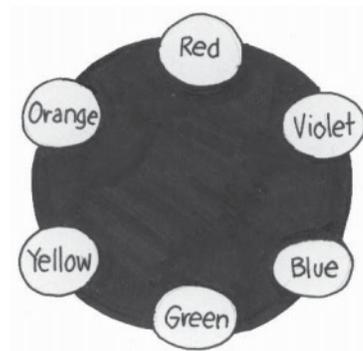
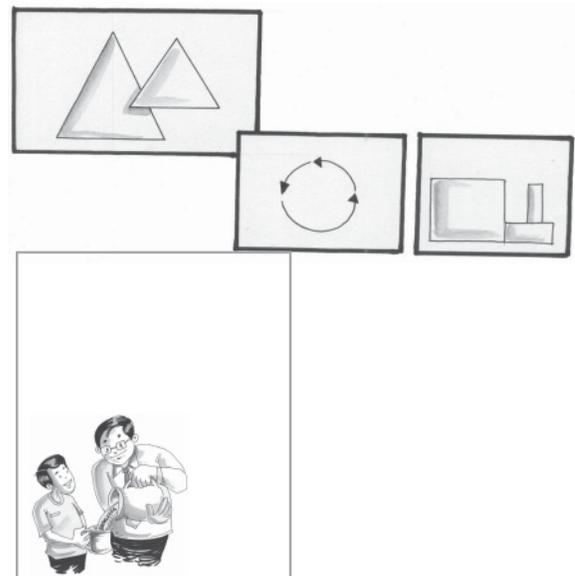
Space to the printed media is like silence.

Lines connect elements together and will direct viewers to study the visual in a specific sequence.

Texture can be used in the same way as color to emphasize, separate or enhance unity.

Color adds significantly to many visual materials.

Color harmony relates parts of a visual to each other.



chapter four

Monitoring and evaluation of sustainable agriculture training program



Overview of monitoring and evaluation in sustainable agriculture training program



Parameters of sustainable agriculture training program monitoring and evaluation

The monitoring and evaluation plan





Overview of M&E in SA training program

Duration

1 hour and 30 minutes

Description



This session clarifies the significance of monitoring and evaluation (M&E) in the context of a training program. It sets the tone for subsequent discussion by establishing the participants' knowledge level and involvement in the M&E of training programs. Highlighting the significance of M&E in a training program, ensures appreciation for the incorporation of M&E at different levels of the training process.

Objectives

At the end of this session, the participants should be able to:

- present the current monitoring and evaluation practices in their organization;
- distinguish monitoring and evaluation as different but related processes; and
- discuss the importance of monitoring and evaluating a training program.

Learning aids and materials

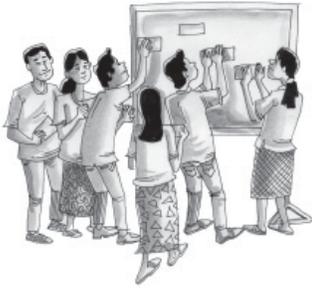
- Handout: "Overview of M&E in SA training programs".
- "Guide questions on current training M&E practices".
- Meta cards, newsprint, masking tape, permanent markers.
- OHTs: "What is monitoring?", "What is evaluation?" and "Why M&E?".



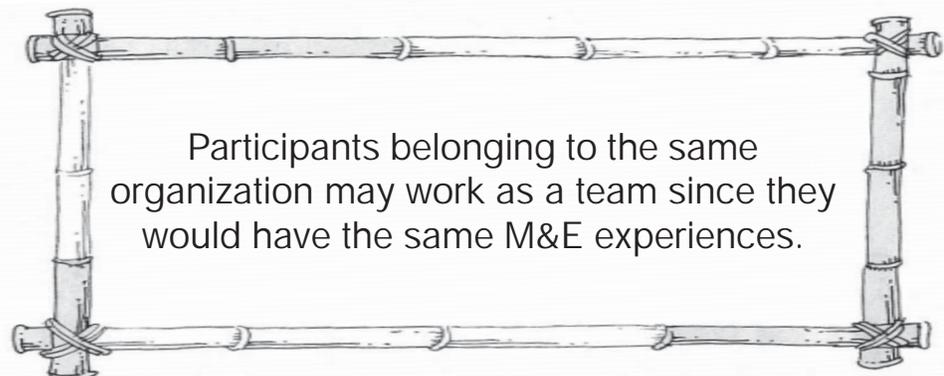
Overview of M&E in SA training program

■ Procedure

Activity 1: Sharing on current M&E practices [30 minutes]



- Write the key words to guide questions 1, 2, 3A, 4 and 5 found in Attachment 1 on metacards and post these on the board; these metacards should be arranged at the top of the board like the heading of columns. Label these set of cards as "Monitoring Practices".
- Prepare a separate set of metacards using the key words to guide questions 1, 2, 3B, 4 and 5 and arrange these at the top of another board. Label these set as "Evaluation Practices".
- Explain the questions corresponding to these key words. Point out that monitoring and evaluation are distinct processes and the activities under each may be different. Hence, there are separate boards for monitoring and evaluation practices. Distribute metacards to the participants and ask each one to write his/her answers to the questions on these cards. Ask them to distinguish between their monitoring and evaluation practices.
- Ask the participants to post their answers on the board, ensuring that the answers are posted under the appropriate column.
- Summarize the key points of the responses; highlight common practices in monitoring and those in evaluation. Note the different roles that the participants play in M&E. Ask for clarifications, where needed. Explain that this summary lays the ground for subsequent discussions.



Overview of M&E in SA training program



Activity 2: Interactive discussion on the definitions of M&E [20 minutes]

- Ask the participants to share their understanding of the two concepts: Monitoring and Evaluation. Write these ideas on the board; summarize similarities and differences and point out which ones seem to be accurate and which ones are not.
- Wrap-up the session by discussing the key features of monitoring vis-à-vis those of evaluation using the OHTs on "What is Monitoring" and "What is Evaluation".
- Explain that monitoring and evaluation are distinct but related processes.

Activity 3: Interactive discussions on Why M&E [30 minutes]

- Ask the participants to share their ideas on the importance of monitoring and evaluation. Write these ideas on the board; summarize similarities and differences and point out which ones seem to be accurate and which ones are not.
- Summarize the key points of the discussion using the OHT "Why M&E"

Activity 4: Session wrap-Up [10 minutes]

- Provide a summary of the whole session by highlighting key learning points, then lead the discussion to the next topic.



TIP

The facilitator may also ask the participants to provide the summary



Overview of M&E in SA training program



■ Suggested reading materials

- Aaker, Jerry and Shumaker, Jennifer. 1994. Looking Back and Looking Forward: A Participatory Approach to Evaluation. Heifer Project International, USA.
- Booth, William, Ebrahim, Radya and Morin, Robert. 1998. Participatory Monitoring, Evaluation and Reporting: An Organizational Development Perspective for South African NGOs. PACT, South Africa.
- Estrella, Marisol, Blauert, Jutta, Campilan, Dindo, Gaventa, John, Gonsalves, Julian Guijt, Irene, Johnson, Deb and Ricafort, Roger (eds.). 2000. Learning from Change: Issues and Experiences in Participatory Monitoring and Evaluation. London Intermediate Technology Publications, Ltd., United Kingdom.
- Rubin, Frances. 1995. A Basic Guide to Evaluation for Development Workers. Oxfam U.K. and Ireland, United Kingdom.
- The Center for Development and Population Activities, 1994. Project Design for Program Managers. The Center for Development and Population Activities, USA.

Overview of M&E in SA training program



Development programs in poor countries is replete with experiences of interventions that could have been better had the implementers known when and how to adjust implementation. Indeed, with all the effort and resources that have been poured into poor nations, it is surprising that development workers have not achieved more. These experiences of programs and projects that have gone sour are the best arguments for the need to constantly monitor and evaluate the implementation of development programs. Training programs are not exempt in this regard. The application of M&E in training programs may be slightly different in terms of focus and methodologies but the basic principles remain.



Definitions

Monitoring and evaluation are fundamental elements in the overall management of a training program or activity. They are distinct but related processes.

Monitoring is a process of periodically checking if project implementation is proceeding according to plan. In training, it implies watching over the preparation and implementation stages, considering the various elements of the training implementation plan:

- Training content and methods
- Training activities
- Training schedules
- Persons responsible
- Identified participants
- Learning materials, visual aid and other resources
- Venue or location of training
- Target outputs



Overview of M&E in SA training program

- Evaluation, on the other hand, is a process of determining the results of program intervention at different phases of implementation. It involves measuring changes in knowledge, skills, attitudes and behavior that came about because of the training program or activity. It also includes tracking the contributions of training to improvements at the organization or community level.

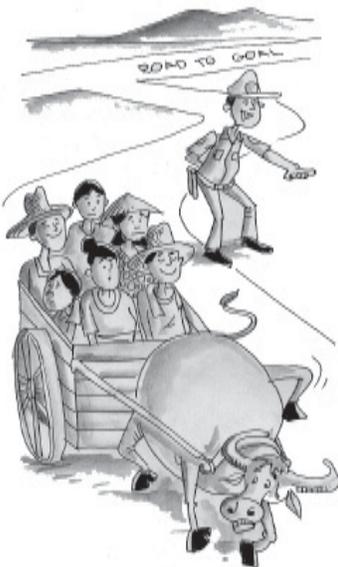
Why M&E?

Monitoring, along with needs assessment and program planning, contribute to the quality of training programs. Needs assessment and planning ensure that the development problems are properly analyzed; identified solutions are adequate and appropriate and program implementation, systematic.

Monitoring, on the other hand, allows the development practitioner to check that implementation follows the program plan. If deviations happen, monitoring enables the implementers to detect the shift and avoid problems that may arise. Decisions to modify implementation can be made in a timely and appropriate way if these are based on reliable information from sound monitoring. Monitoring therefore ensures the achievement of the intended results by providing information that would enhance training program implementation.

The results of a training program are revealed and documented through evaluation. This way, the development practitioner can account for the resources that have been put into the project. This type of accountability is particularly important to donors and funding agencies; other stakeholders may also be interested to learn how resources contributed to the improvement at community, organizations or individuals.

The significance of evaluations, however, extends beyond documentation of project results. It also provides information that serve as basis for project-related decisions. Evidences of positive results may support the decision to continue or expand the coverage of the training program. They also provide arguments for wider adoption of a program strategy. In some cases, evaluation results may be used to obtain support or advocate for changes in policies.



Overview of M&E in SA training program



Evaluation may also reveal implementation gaps, which may help implementers formulate appropriate follow-up activities or modification in the training program design. Lessons learned through evaluation help the training team identify the ways of improving the next training program or activity.

In summary, M&E serve the following purposes:

Monitoring

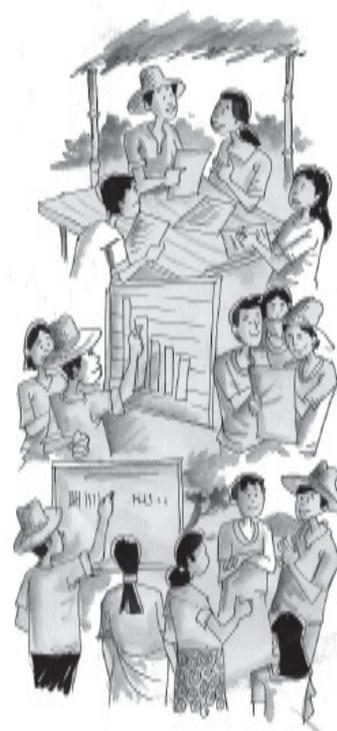
- helps improve training program implementation
- provides data for timely and appropriate adjustments in the training program or activity

Evaluation

- determines the accomplishment of the training program goals and objectives
- ensures accountability to donors and stakeholders
- provides basis for decisions about the training program
- helps identify appropriate follow-up support to address training gaps
- generates lessons that may be used to strengthen current and future training programs
- generates data that provide evidences for advocacy

Participatory M&E

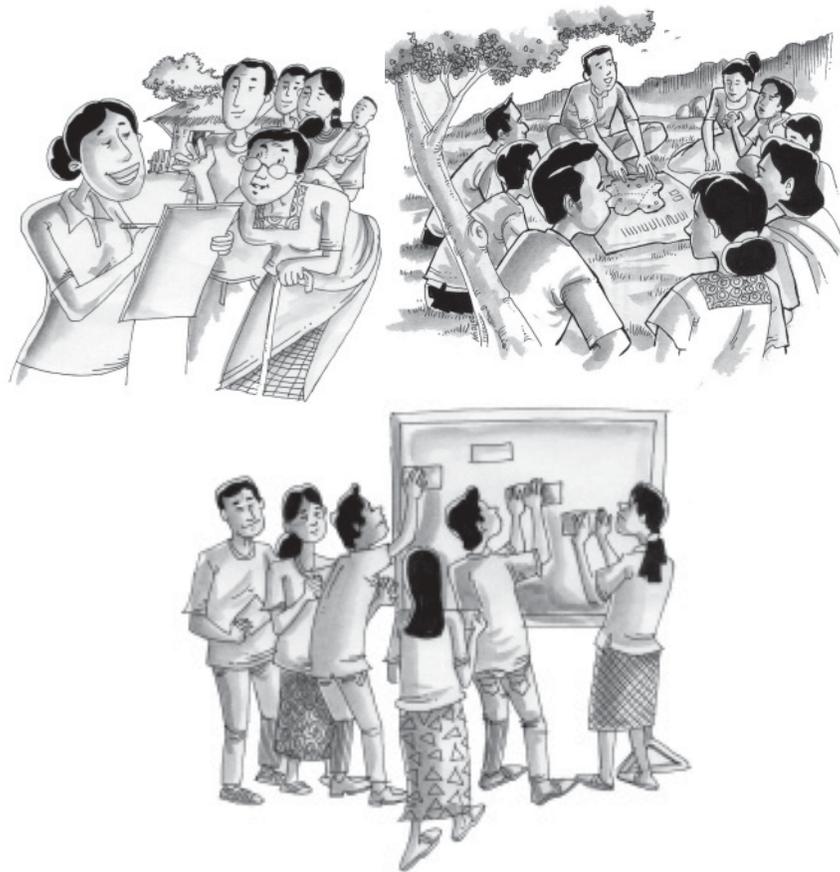
The recognition of the significance of people's participation in development processes has raised corresponding interest in the stakeholders' involvement in monitoring and evaluation. Participatory Monitoring and Evaluation (PM&E) broadens the roles of stakeholders; they are no longer mere sources of information. They may also take part in defining the M&E objectives, the indicators as well as the methods and tools that will be used to obtain data. They may likewise be involved in the actual collection, collation and analysis of data.





Overview of M&E in SA training program

- In this way, PM&E makes the training participants' voices count in determining the success or failure of the training program. PM&E also engages the stakeholders in learning from the project. Together, the training team and the participants analyze the strengths and weaknesses of the training program implementation and collectively define appropriate courses of action. Finally, through involvement in monitoring and evaluation, the capacities of stakeholders to implement and manage training programs are also enhanced. This is important especially if the training participants are expected to conduct similar training activities or programs.



Overview of M&E in SA training program



Attachment 1

Guide questions on current training M&E practices

1. **WHAT**
What are the specific information that you/ your organization wants to find out when your organization conducts monitoring/evaluation of training activities/ programs?
2. **WHO**
Who are the persons involved in monitoring/evaluation of training activities/ programs? What role does each one play in the process?
- 3.A **HOW OFTEN**
How often does your organization conduct monitoring of training activities/ programs?
- 3.B **WHEN**
When does your organization conduct evaluation of training activities/ programs?
4. **WHAT TOOLS**
What tools and data collection methods do you use in monitoring/ evaluating training activities/programs?
5. **FOR WHAT**
In what ways do you use the information that you collect from the monitoring/ evaluating activities?



Overview of M&E in SA training program

Attachment 2

OHT

What is monitoring?

- Systematic, continuous or periodic surveillance over the implementation of a training activity, project or program to ensure that elements of the program/ project design are implemented according to the plan.

- It considers different components of the training plan:
 - Training contents, activities and methods
 - Training schedules
 - Task-in-charge
 - Participants
 - Learning materials, visual aids and other resources
 - Venue or location of the training activities
 - Target outputs

Overview of M&E in SA training program



Attachment 3

OHT

What is evaluation?

- Systematic process which aims to determine as objectively as possible, the long term or short term results of training activities, projects and programs in the light of the training goals and objectives.
- It involves making judgments about the training results by comparing these with standards and criteria of successful results.



Overview of M&E in SA training program

Attachment 4

OHT

Why M & E ?

Monitoring

- helps improve training program implementation
- provides data for timely and appropriate adjustments in the training program or activity

Evaluation

- determines the accomplishment of the training program goals and objectives
- ensures accountability to donors and stakeholders
- provides basis for decisions about the training program
- helps identify appropriate follow-up support to address training gaps
- generates lessons that may be used to strengthen current and future training programs
- generates data that provide evidences for advocacy



Parameters of SA training program M&E

Duration

3 hours

Description

This session responds to the question: "What do we monitor and evaluate in an SA Training Program?". It considers the scope of training M&E at each level of the training hierarchy and at different stages of training program implementation. Such information prepares the participants for the task of planning and implementing their own training program M&E.



Objectives

At the end of this session, the participants will be able to:

- Define the appropriate scope of evaluation activities at different levels of the training hierarchy and at different stages of implementation.
- Identify possible substantive focus of SA training program evaluation.
- Define the appropriate scope of monitoring activities.

Learning aids and materials

- Handout: "Parameters of a SA Training Program M&E"
- Jigsaw Puzzle with at least 24 pieces.
- OHTs::
 - "Training hierarchy objectives and results"
 - "SATTP program map"
 - "Substantive areas of evaluation"
 - "Evaluation activities and the stages of training program implementation"
 - "Monitoring schedule"



Parameters of SA training program M&E

- Copies of a sample of training program goals/objectives from the session on training program design or the "Sample of training hierarchy objectives"
- Poster: "Stages of training program implementation"
- Small sheets of paper, each bearing one of the following types of evaluation activity: baseline data collection, daily evaluation, mid-term or periodic evaluation, summative evaluation and impact evaluation.
- Metacards, newsprint, masking tape, permanent markers

Procedure

Activity 1: Game: Small puzzle, big puzzle [30 minutes]

- Before the training session, prepare the jigsaw puzzle by dividing the whole picture into four parts. As much as possible, divide the puzzle in a way that makes it difficult to figure out what picture is formed in each one-fourth segment. It would be good if each one-fourth segment has equal number of jigsaw pieces; this, however, is not necessary.
- Put the jigsaw pieces of each of the four segments into separate envelopes. Make sure that all the pieces in each envelope would interlock to form one-fourth of the whole puzzle.
- Divide the participants into four groups. Explain that this is a game of identifying the picture in the jigsaw puzzle.
- Give each group one envelope containing jigsaw pieces of one-fourth of the entire puzzle. Allow 15 minutes for each group to complete the puzzle segment assigned to them.
- Ask each group to identify the picture formed by the pieces that they have. Then ask them to figure out what the whole picture is.
- Finally, ask all groups to put the entire puzzle together. A prize may be given to the group that correctly identified the picture.





Parameters of SA training program M&E

Activity 2: Interactive lecture on the hierarchy of results [30 minutes]

- Relate the previous game to the training hierarchy, where each training component contributes to the success of the whole training program.
- Using the "The training hierarchy objectives and results" (see Attachment 1), review the training hierarchy. Explain that the objectives vary in scope and complexity at each level. Explain also the differences in the scope of possible results at each level. Relate this to the question of what should be evaluated at each level of the training hierarchy.
- The "SATTP program map" (see Attachment 2) may be used as an example to explain the logical relationship among the different levels of the training hierarchy.

Activity 3: Workshop: Identifying key result areas [30 minutes]

- Divide the participants into groups of 4 to 5 members.
- Provide each group with a sample of training program goals/objectives from the session on Training program design or the "Sample of training hierarchy objectives" (see Attachment 3)
- Ask each group to identify appropriate expected results at each level of the program map. Ask representatives of each group to briefly present their workshop output.

Activity 4: Interactive lecture on scope of training evaluation results [30 minutes]

- Using the results of the preceding workshop as a starting point, explain that:
 - outputs level are usually measured in terms of participants' reaction and learning
 - outcomes level are usually measured in terms of individual behavioral/ attitudinal change
 - impact level are usually measured in terms of improvements at the organization, farm, household, community or farmer levels.
- Discuss the different substantive areas of evaluation using the corresponding OHT on "Substantive areas of evaluation" (see Attachment 4).



Parameters of SA training program M&E

Activity 5: Interactive lecture on evaluation activities and the stages of training program implementation [20 minutes]

- Present the poster on "Stages of training program implementation" (see Attachment 5).
- Ask for 5 volunteers and give each one a slip of paper, each containing a type of evaluation activity (baseline data collection, daily evaluation, mid-term or periodic evaluation, summative evaluation and impact evaluation). Ask the volunteers to pin the slips of paper at the appropriate stage of training program implementation.
- Discuss the responses, emphasizing that M&E activities vary at different stages of the training program. Use the OHT on "Evaluation activities and the stages of training program implementation" (see Attachment 6) to synthesize the discussion.

Activity 6: Discussion on the scope of monitoring activities [30 minutes]

- Present the "Monitoring Schedule" (see Attachment 7) and review the definition of monitoring.
- Ask the participants to write on metacards their ideas on what should be monitored in a SA training program.
- Ask them to put the metacards up on a wall or blackboard.
- Ask two or three volunteers to cluster the cards that are on the board.
- Ask the group to check if they have suggestions to improve the clusters.
- Ask the group to label each cluster of cards.
- Summarize the session by discussing the elements that need to be monitored in a training program.

Activity 7: Session Wrap-Up [10 minutes]

- Provide a summary of the whole session by highlighting key learning points then leading the discussion to the next topic.

Parameters of SA training program M&E



Suggested reading materials

- Agochiya, Devendra. 2002. Every Trainer's Handbook (Chapter 9). Sage Publications, Inc., India.
- Booth, William, Ebrahim, Radya and Morin, Robert. 1998. Participatory Monitoring, Evaluation and Reporting: An Organizational Development Perspective for South African NGOs. PACT, South Africa.
- Dale, Reidar. 1998. Evaluation Frameworks for Development Programmes and Projects. Sage Publications, Inc., India.
- Kirkpatrick, D.K. 1994. Evaluating Training Programs: The Four Levels. Berrett-Koehler Publishers, USA.
- Lodzinki, Adam. 1995. Linking Program Design and Evaluation: Five Guiding Questions for Program Designers. Chapter 3 in Evaluation Methods Sourcebook II, Arnold J. Love (ed.). Canadian Evaluation Society, Canada.
- Margoluis, Richard and Salafsky, Nick. 1998. Measures of Success: Designing and Monitoring Conservation and Development Projects. Island Press, USA.
- Roche, Chris. 1999. Impact Assessment for Development Agencies: Learning to Value Change. Oxfam GB with NOVIB, United Kingdom.
- Social Impact, 1999. Managing the Project Cycle: A Guide to People-Centered and Results-Oriented Project Management. Social Impact, USA.
- Taschereau, Suzanne. 1998. Evaluating the Impact of Training and Institutional Development Programs: A Collaborative Approach. The international Bank for Reconstruction and Development, USA.
- United Nations Centre for Human Settlements (HABITAT), no date. Manual for Evaluating Training's Impact on Human Settlements. HABITAT.



Parameters of SA training program M&E



There is a basic principle among travelers: If you don't know where you are going, you will never know if you got there - in fact you will never know if you got lost along the way.



For us to know if our SA training program has achieved anything, we need to refer back to what we planned to achieve. The link between the training program design and M&E cannot be over-emphasized. The factors that we will monitor and elements that we will evaluate are those that we have incorporated into the training program/project design and implementation plans.

Events following program intervention, however, cannot all be predicted. Unintended results and consequences of uncontrolled environmental factors need to be considered to complete the picture of the training program that we seek to analyze.

This handout attempts to provide a guide on what to monitor and evaluate in an SA training program. To organize this paper, we have to view training program M&E from both a hierarchical and a temporal perspective. A section that covers content areas of SA training M&E is also included.

The combination of these two views along with the cross cutting substantive themes define the scope of M&E in sustainable agriculture training programs.

Evaluation and training program goals and objectives

The training program consists of different inter-related levels. The expected results at each level differ in scope and complexity.

The immediate results of training sessions, activities or events are *outputs*. At this level, the initial indicator of results may be the number of participants that have actually undergone the training event. Attendance, however, is not an adequate measure of the success of a training session/event. Proper implementation and management of a training course may be reflected when we measure the learner's reactions and level of learning.



Parameters of SA training program M&E

The training hierarchy objectives and results



■ Learner's reaction

This is "happiness index" or the learners' subjective assessments of the training session, activity or event. It may encompass reactions to the training content, methodologies, learning aids and materials, trainer/facilitator as well as the overall learning environment.

For example, extensionist learners may express dissatisfaction over the methods used by the facilitators and resource persons. They are 'reacting' to the methods that were in use. Farmer learners may express fondness of the trainer's ways and attitude. They are 'reacting' to the trainer's attitude.



■ Learning

Training events are organized for learning. At the end of a training session, activity or event, some level of cognitive understanding of principles, theories, and facts covered in the training course are expected. Basic elements of skills, methods and techniques can also be acquired in a training course. Rudiments of change in attitudes and feelings may also be covered by the evaluation.

Parameters of SA training program M&E



Learning may be measured through written, oral or performance tests. Written or oral tests are designed for measuring knowledge, attitudes, and cognitive learning, whereas, performance tests are designed to measure skills.

For example, if the extensionist learners are able to demonstrate the construction of an A-frame, then this is a clear manifestation of learning.

Training sessions activities or events contribute to the accomplishment of *training program objectives*. Results at this level are technically called *outcomes* or the short-term results of a training program. Often, the short-term objectives of a training program are behavioral changes or translation of lessons gained from training into concrete actions. This may mean a change in attitude or the application of new skills and knowledge.

For instance extensionists may use PRA techniques to gather information for planning purposes. They may manifest greater gender sensitivity in developing community plans, or show how they value participation and farmers' knowledge by considering these elements in the community planning process.

Ultimately, behavioral changes lead to broader changes in organizations, communities or life conditions. SA training programs may be designed to achieve these long-term goals. Results at this level are the impact of the training program.

Organizational results may include improvements in the SA program of the organization as well as improvements in the organization's capacity to implement this program. This may include improvements in the quality of fieldwork, efficiency in the management of SA projects or more effective programs and projects in the communities. At the family and community level, we may expect to find indications of improvements in the quality of life and the environment. This may mean improved soil quality, enhanced farm productivity, increased income or better food security.





Parameters of SA training program M&E

■ Evaluation activities through time

Training programs and training events are implemented in phases across time. The temporal sequence of training activities dictates that the scope of M&E activities also varies across time:

■ Pre-training phase

Baseline data should be obtained before the actual conduct of the training to assess the learners' development needs and potentials. Baseline data collection may also include assessment at the organizational, community, farm, farming household and farmer levels in order to design appropriate training programs. In addition to helping at the designing phase, baseline data are also used to gauge the results of training. Achievements are determined by comparing situations before and after a training program, event or activity.



■ Implementation phase

Progress or on-going evaluation takes place even while the training activity, event or program is going on. These are sometimes referred to as formative evaluation, and may include:

□ *Daily evaluation*

Used to track the daily progress of a training activity/event. This provides quick feedback on the learners' reactions to the training and their understanding of the topics covered in order to check how effective the implementation has been. Daily evaluation can also detect problems that may arise so that solutions may be immediately worked out.

□ *Mid-term or periodic evaluation*

This is carried out at selected points during the implementation of a training activity, event or program to check how near or far the training is from achieving its objectives. Periodic evaluation can ensure relevant direction for the remaining period of the training.



Parameters of SA training program M&E

■ Post-training phase

The post-training evaluation is conducted either immediately after the training event or program or at an appropriate time after the training event/program has been completed. There are two sub-types:

□ *Summative evaluation*

This takes place as soon as the training event/program is completed, and provides a summary judgment of the achievements of the training event/program. This can also determine what other needs have not been addressed by the training and forms the basis for future training interventions.

□ *Impact evaluation*

This is usually conducted some time after completing a training event/program. Some evaluators do this type of evaluation three months, six months, one year or even five years after the training event/program. The idea is to find out the ultimate value of the training. It assumes that the learners have had adequate time to sort out and apply learning in the work place.

Some substantive themes to consider in SA training program evaluations

Reviewing training programs and projects means weighing actual results against some ideal situation that had been intended. To do this, you may wish to focus the evaluation on substantive issues that are the usual concerns of program managers and implementers. These include:

- **Relevance** - refers to the significance of the training event/program to the specific needs or problems of the participants, their organization and/or the communities that they work with. At the planning stage, relevance is addressed by thorough analysis of the problems and issues at all levels of concern. Problem analysis should also include designing the appropriate program/project to address these concerns. At the evaluation stage, we then test the extent to which we have adequately addressed the problems and issues.
- **Effectiveness** - refers to the program/project performance with respect to its stated objectives. Evaluating effectiveness means determining whether or not the training event/program achieved its desired objectives.

Parameters of SA training program M&E



- **Efficiency** - refers to measuring the cost of producing results. Ideally, a training event/program achieves the greatest results with the least amount of input in terms of resources and time. Efficiency has to be assessed to determine use of resources to achieve the best results.
- **Impact** - refers to the broader results of the SA training event or program at the level of the trainee, his/her organization, and the families and communities that he/she works with. Since SA advocates and supports changes in agricultural practices, farm economics, the environment and in the social arena, the results we seek when we train SA trainers are guided by these desired goals. Consequently, evaluation should also consider these factors as indicators of the success of the training event/program.
- **Sustainability** in itself is a desired result of SA. The concept, however, is interpreted in various ways; it would be good for program managers and implementers to explore these conceptual variations for purposes of planning as well as evaluation. At program/project level, sustainability may be defined as the potential continuation of project activities, institutions or impact following the withdrawal of external support. Worah, Svendsen and Ongleo (1999, p. 204) recommend some questions to ask to determine sustainability.



Sustainability questions

- **Policy** - To what extent will supportive policy continue after the project has ended?
- **Ownership** - To what extent will stakeholders have ownership of the project initiatives after it has ended?
- **Technology** - To what extent will agencies responsible for follow-up be able to sustain/use the technology after external support has ended?
- **Environmental impact** - What will be the longer-term impacts and how will potential negative impacts be mitigated?
- **Social/cultural impacts** - will the project lead to negative long-term social/cultural impacts and how will these be mitigated?
- **Marginalized groups** - How can continued access to project benefits be guaranteed to marginalized groups (including women)?
- **Institutional/management capacity** - Will organizations/ institutions responsible for follow-up have sufficient management capacity to guarantee this?
- **Economic/ financial viability** - To what extent will there be sufficient finances to allow for continued running costs, maintenance, etc.?

Parameters of SA training program M&E



- **SA principles** - evaluation of SA training events/programs may also look into the indicators of impact in the areas of: ecological soundness, gender responsiveness, cultural appropriateness, economic viability, technological appropriateness, and social equity. The SEAMEO Regional Center for Graduate Study and Research in Agriculture (SEARCA, 1995) suggests indicators of results of the application of sustainable agriculture philosophy, principles and practice.

Monitoring training activities

Monitoring is critical at all stages of a training program. It requires the training team to focus on elements that are slightly different from the focus of evaluation. These elements are outlined in the implementation plan. At the preparation stage, it is essential to ensure that:

- sessions are designed in line with the set objectives
- training materials are delivered on time
- visual aids, handouts and other learning aids are ready
- training venue has adequate space, lighting, ventilation and training equipment
- resource persons and training team members have been properly briefed and roles have been clarified
- participants have been adequately informed of the training details





Parameters of SA training program M&E

- Events that happen while a training activity is on going may require swift reactions that can be done only with constant monitoring. Reflection sessions among the training team are useful to assess the day-to-day progress and plan for modifications in subsequent sessions. The following elements may be considered:
 - signs of restlessness, tiredness or boredom - this may indicate the need to change style and methodology or a need for a quick break;
 - clarity of content and appropriateness of methodology - remedial sessions may be required if essential topics were not adequately covered during the actual session;
 - time management - the training team must balance the length of a training session and the adequacy of content by regulating unessential discussions and maximizing methodologies that enrich content;
 - availability and use of resources and materials - swift changes and creativity may be needed if planned materials are unavailable; the training team must also be conscious of the efficient use of resources if we are to achieve cost effective training programs; and
 - overall coordination, facilitation and administration or management of the training



References

- Worah, Sejal; Seslaravendsen, Dian; and Ongleo, Caroline. 1999. Integrated Conservation and Development: A Trainer's Manual. World Wild Fund for Nature. U.K.
- SEAMEO Regional Center for Graduate Study and Research in Agriculture (SEARCA). 1995. Working Paper on Sustainable Agriculture Indicators. SEARCA. Philippines.

Parameters of SA training program M&E



Attachment 1

OHT

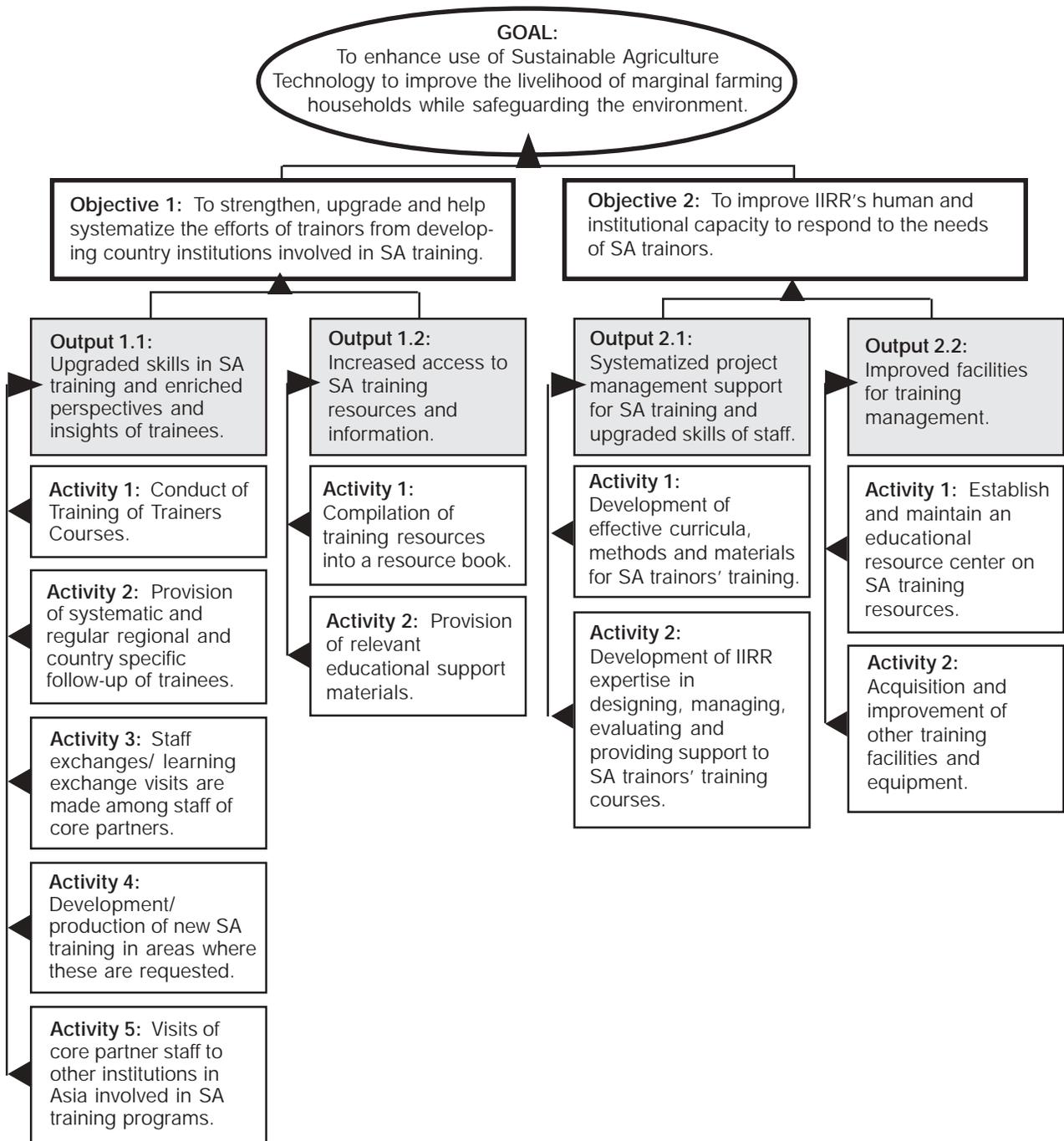
Training hierarchy objectives and results





Parameters of SA training program M&E

SATTP Program Map



Parameters of SA training program M&E



Attachment 3

OHT

Sample of training hierarchy objectives

Hierarchy of objectives	Training program objectives	Key result areas
Training program goal (long term goals with broad scope)	The training program aims to ensure sustained improvements in farm productivity through the development and use of appropriate and environment-friendly technologies.	
Training program objectives (medium term objectives with narrower focus)	The training program aims to develop the leadership and management capacities of key leaders of the farmers' association.	
Training outputs (short term targets with very specific focus)	At the end of the training, participants will be able to identify the basic principles behind sustainable agriculture.	



Parameters of SA training program M&E

Attachment 4

OHT

Substantive areas of evaluation

Relevance – refers to the significance of the training to the specific needs or problems of the participants, their organization and/or the communities that they work with.

Effectiveness – refers to the program/project performance with respect to its stated objectives. Evaluating effectiveness means determining whether or not the training event/program achieved its desired objectives.

Efficiency – refers to measuring the cost of producing results. Ideally, a training event/program achieves the greatest results with the least amount of input in terms of resources and time.

Impact – refers to the broader results of the SA training event or program at the level of the trainee, his/her organization, and the families and communities that he/she works with.

Sustainability is a desired result of SA. At program/project level, sustainability may be defined as the potential continuation of project activities, institutions or impact following the withdrawal of external support.

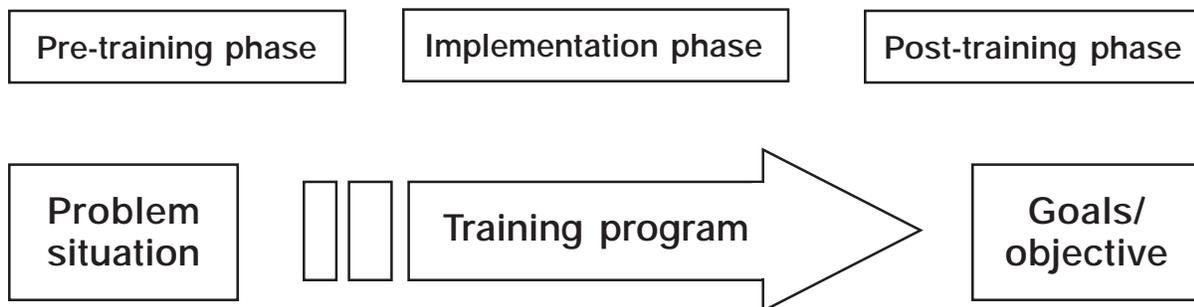
Parameters of SA training program M&E



Attachment 5

OHT

Stages of training program implementation



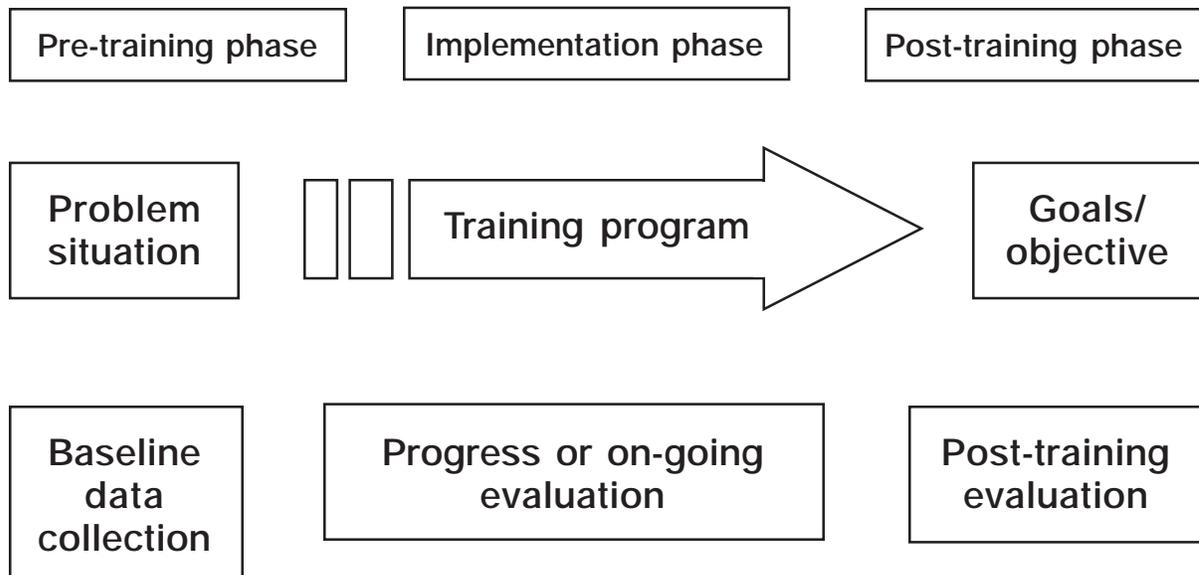


Parameters of SA training program M&E

Attachment 6

OHT

Evaluation activities and the stages of training program implementation



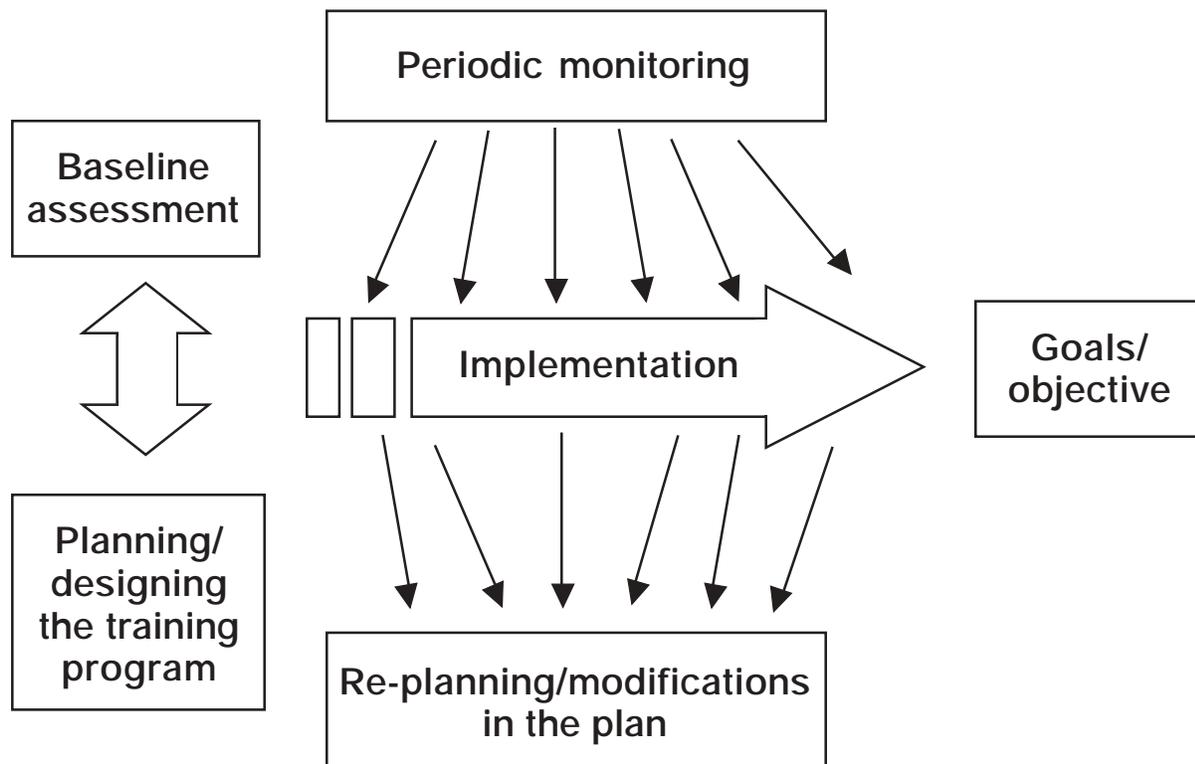
Parameters of SA training program M&E



Attachment 7

OHT

Monitoring schedule



The monitoring and evaluation plan



Duration

3 hours

Description

This session focuses on the practical tasks in preparing a M&E Plan for implementation. The major elements that go into such a plan are introduced. Exercises are included to enhance learning.



Objectives

At the end of this session, the participants should be able to:

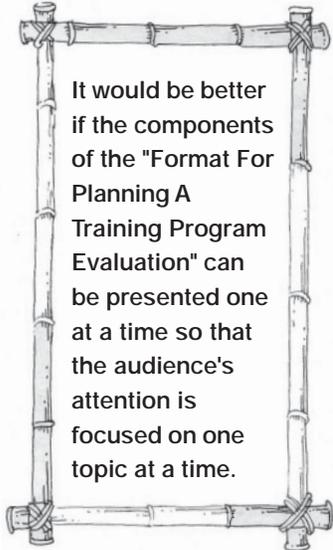
- Identify the different components of a M&E Plan;
- Develop an evaluation plan for a SA training program; and
- Develop a monitoring plan for a SA training program.

Learning aids and materials

- Handout on "Developing a M&E Plan for SA Training Programs"
- OHTs:
 - "M&E Cycle"
 - "Framework for designing a training program"
 - "Example of developing training evaluation objectives"
 - "Format for planning a training program evaluation" ,
 - "Sample monitoring plan"
 - "Format for planning the monitoring activities of a training program"
- Old newspapers and magazines, colored paper, scissors, paste, crayons
- Metacards, newsprint, masking tape, permanent markers



The monitoring and evaluation plan



TIP

It is better if the participants will use the goals and objectives of a training program that they are currently working on, or those that they formulated in the session on "Designing a Training Program".

■ Procedure

Activity 1: Brief lecture on overview of the M&E process [15 minutes]

- Explain the general flow of monitoring and evaluation by presenting the OHT on "The M&E Cycle".
- Present the "Framework for Designing A Training Program" to emphasize that the M&E Plan is an integral part of the training program design.
- Explain that the session deals only with the planning stage of the M&E process. Briefly present the component of a M&E plan

Activity 2: Exercise on developing evaluation objectives [40 minutes]

- Using the OHT "An Example On Developing Training Evaluation Objectives", explain what evaluation objectives are and how these relate to the hierarchy of training program objectives.
- Form groups consisting of 4 to 6 participants. Using the same example, ask each group to develop evaluation objectives aside from those that were already presented. Ask the groups to present their answers. Provide suggestions to enhance the evaluation objectives.

Activity 3: Structured learning exercise on understanding indicators and measures of success [45 minutes]

- Provide each participant with old newspapers, magazines and other materials for the "Design a Costume" activity.
- In this activity, the participant will use the materials to design a costume, which he/she will wear and display by parading around the room.
- After the parade, ask 5 participants to identify the best costume and the reason for their choice.
- Based on the responses, discuss what indicators are and why they are important in measuring "success".

The monitoring and evaluation plan



Activity 4: Exercise on developing an evaluation plan [45 minutes]

- Present the "Format For Planning A Training Program Evaluation" and explain each component of this format.
- Form the same groups as in Activity 2. Ask each group to fill up the remaining columns (Indicators, Sources of Data, Method of Data Collection, Types of Tools, Frequency and Period of Data Collection) using the stated evaluation objectives in the "Format For Planning A Training Program Evaluation" as well as those that the group formulated in Activity 2.
- Ask the groups to present their answers. Provide suggestions to enhance the evaluation plan.

Activity 5: Lecture on developing a monitoring plan [30 minutes]

- Review with the group the differences in the focus of evaluation and monitoring. Explain that the difference means slight difference in the formulation of the monitoring objectives and the monitoring plan as a whole.
- Present the OHTs on "Sample Monitoring Plan" and discuss the main Program Components that Require Monitoring, Monitoring Questions, Sources of Information and Use of Information.
- Present the "Format For Planning The Monitoring Activities Of A Training Program" and explain that this is an expanded form of the sample that was earlier presented.

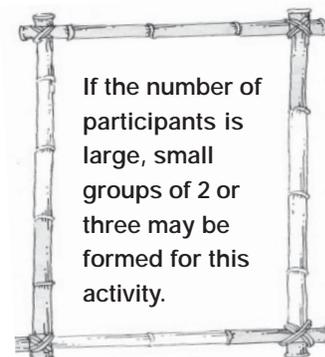
Activity 6: Session wrap-up [5 minutes]

- Summarize the whole session then lead the discussion to the next topic.



TIP

If a Training Program Design is available from previous sessions or from the participants' own work experience, an exercise in developing a monitoring plan may be included in this activity.



If the number of participants is large, small groups of 2 or three may be formed for this activity.



The monitoring and evaluation plan



■ Suggested reading materials

Aaker, Jerry and Shumaker, Jennifer. 1994. Looking Back and Looking Forward: A Participatory Approach to Evaluation. Heifer Project International, USA.

Agochiya, Devendra 2002. Every Trainer's Handbook (Chapter 9). Sage Publications, Inc., India.

Booth, William, Ebrahim, Radya and Morin, Robert 1998. Participatory Monitoring, Evaluation and Reporting: An Organizational Development Perspective for South African NGOs. PACT, South Africa.

Dale, Reidar 1998. Evaluation Frameworks for Development Programmes and Projects. Sage Publications, Inc., India.

Eyken, van der Willem. 1992. Introducing Evaluation. Bernard van Leer Foundation, Netherlands.

Gosling, Louisa and Edwards, Mike 1995. Toolkits: A Practical Guide to Assessment, Monitoring, Review and Evaluation. Save the Children, United Kingdom.

Margoluis, Richard and Salafsky, Nick 1998. Measures of Success: Designing and Monitoring Conservation and Development Projects. Island Press, USA.

The Center for Development and Population Activities, 1994. Project Design for Program Managers. The Center for Development and Population Activities, USA.



The monitoring and evaluation plan

Developing an M&E plan for SA training

To maximize the benefits of proper M&E, these activities must be carefully planned and deliberately implemented. Good planning ensures that time and resources are allocated for the M&E activities. It also helps guarantee that relevant data are collected, using the most appropriate methods. This paper provides a guide to the preparation of an M&E plan for a SA training program.



Overview of the process

M&E are specialized forms of research. A good M&E plan incorporates the basic elements of sound research:

- the statement of the monitoring and/or evaluation objectives
- identified variables or indicators of performance needed to assess the monitoring and/or evaluation objectives
- identified sources of information
- methods and tools for data collection
- planned system for processing, analyzing and using the information.

To manage the M&E processes, it is also necessary to include administrative elements in the M&E plan like:

- persons responsible for data collection and analysis
- planned period and/or frequency of data collection.
- resources/logistics needed to undertake the M&E activities

Data collection, processing and analysis for M&E are anchored on the training program design and the parameters that would be covered by the M&E are defined by this design. The following sections present each component of an M&E plan.



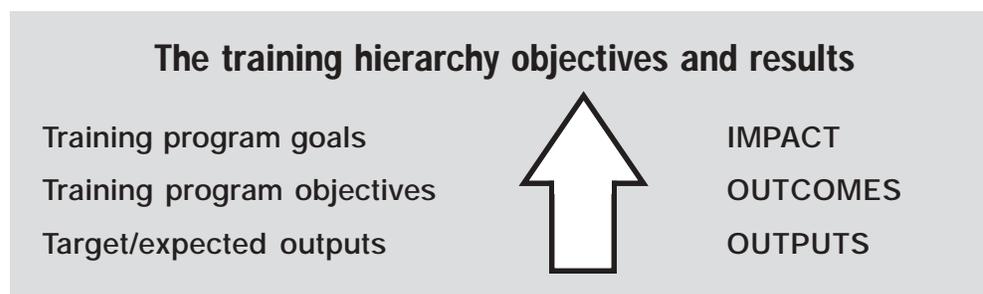
The monitoring and evaluation plan

■ Components of the evaluation plan

Training evaluation objectives

The evaluation objectives state what the training team intends to find out about training through the evaluation. Objectives must be clearly stated because these would be the basis of the whole evaluation process. It may also help if these objectives are stated as evaluation questions.

Since evaluations track what a training program has achieved, evaluation objectives are aligned with the training program goals and objectives. Like the hierarchy of training objectives, evaluation objectives may also have different scopes.



The following are some examples of training objectives with corresponding evaluation objectives.

Hierarchy of objectives	Training program objectives	Evaluation objectives
Training program goal (long term goals with broad scope)	The training program aims to ensure sustained improvements in farm productivity through the development and use of appropriate and environment-friendly technologies.	To determine the effects of the different technologies on farm productivity, labor allocation of men and women and farm biodiversity.
Training program objectives (medium term objectives with narrower focus)	The training program aims to develop the leadership and management capacities of key leaders of the farmers' association.	To determine the improvements in the management of the farmers' association after the training.
Training outputs (short term targets with very specific focus)	At the end of the training, participants will be able to identify the basic principles behind sustainable agriculture.	To determine what participants learned through the training. To determine participants' reactions to the course content.

The monitoring and evaluation plan



Select indicators and standards for evaluation

Indicators are the criteria or signs that tell us that we have achieved our objectives/targets or that they were not achieved. These are usually formulated and agreed upon at the start of the training program, and should also be deliberately identified in an evaluation plan.



For instance, if a training course intends to develop the capability of the trainers in organizing and implementing training courses, we need to have indicators that will show that the capacity of trainers have indeed been developed. Note that there may be more than one criterion of success for any objective or goal. In this example, the criteria for determining what the training has accomplished may include:

- improvement in the quality of training designs that have been prepared
- proper coordination of the training from preparation to implementation.
- improvement in the presentation and facilitation skills
- improvement in the use of training methodologies
- improvement in the use of learning aids and handouts.
- enhancement in the use of TNA and evaluation procedures

Indicators must have some level of specificity and concreteness if they are to be useful in evaluation. Abstract notions of what we intend to achieve should be translated into observable evidences of what we have actually achieved.

In the example presented above, the notion of "capacity in organizing and implementing training course" was translated into:

- capacity to design a training course
- capacity to coordinate the preparations and actual implementation
- presentation and facilitation skills
- capacity to use various training methodologies
- capacity to maximize the use of learning aids and handouts
- capacity to use tools for assessing training needs and evaluation.



The monitoring and evaluation plan

- When formulating indicators, we must also consider the fact that measures of a training program's success may be seen in quantitative as well as in qualitative terms. A mixture of qualitative and quantitative measures would provide a more complete picture of what the training program achieved.

At times, the indicator is specific enough for purposes of data collection. Sometimes, however, the indicators would still have to be broken down into specific variables in order to make data collection possible.

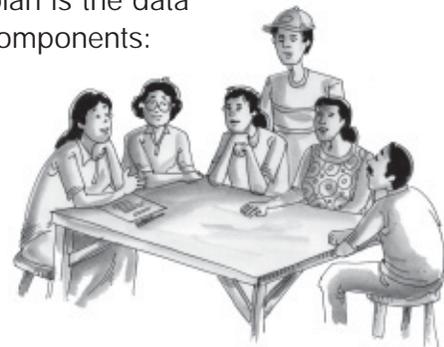
For instance, a training course that states that it would provide equal opportunity for men and women to attend training may use the percentage of women participants as an indicator of success. This indicator is specific enough to guide the evaluator in data collection.

On the other hand, if the indicator of success will be measured in terms of improvements in the presentation and facilitation skills - more specific variables or data requirements will have to be identified before data collection can proceed.

Data collection

The third component of the evaluation plan is the data collection plan. This includes five sub-components:

- sources of data
- data collection methods
- tools for data collection
- frequency and periods of data collection
- task-in-charge



First, we need to identify the source of information. Sources of information may be people (e.g., participant's supervisor) or documents (e.g., minutes of meetings, attendance sheets or training designs) or even events when observations may be made (e.g., actual training sessions conducted by training participants).

Aside from choosing the appropriate source of information, the evaluators need to decide how many cases or observations are needed (sample



The monitoring and evaluation plan

size) and how these cases will be selected (sampling procedures). It is important to have adequate sample of cases, chosen through unbiased procedures to ensure sound evaluation results. Crosschecking data ensures that we have accurate and complete information. Two or more data sources are necessary in crosschecking information.

Data collection methods are closely linked to the identified sources of information. These may range from conventional methods (e.g., survey, observation, key informant interviewing, scaling, ranking and rating) to more innovative and participatory techniques (e.g., community resource mapping, Venn diagrams, focus group discussions).

Wise selection of methodology is based on understanding the relative strengths and limitations of the different methods. Some methods are better at capturing some data types than others. Cost may also be a factor to consider. The sophistication and cost of the methods used should be in line with the level of evaluation involved (simpler for routine evaluation and more complex for major evaluations).

Data collection tools or instruments have to be designed by the evaluators. (e.g. survey questionnaires, workshop designs, and observation sheets). This step should be done with great care to ensure that the variables or indicators would be captured adequately by the instruments that will be used. Pre-testing the instrument helps ensure the quality of data that will be collected.

Data collection in an evaluation research is hinged on the schedule of the training program implementation. Frequency and period for data collection should be timed according to the flow of the training program. There are usually three critical periods for collecting data:

- Before the start of the training program to obtain baseline data
- Midway through the implementation to determine what has been achieved so far
- At the end of the training program to determine results of the training program

Finally, implementation of the evaluation plan would be facilitated if the person in charge and other persons involved in data collection are properly informed of their responsibilities. In fact, the team would have to



The monitoring and evaluation plan

- have a common understanding of the objectives and design of the evaluation. In most cases, it is necessary to train the team that will conduct the data collection to ensure standardized and quality information.

Putting the plan together

Arranging the details of the evaluation plan in a matrix format is a useful way of organizing the plan. A matrix would somehow ensure correspondence among the evaluation questions, indicators, variables, data collection plan and data analysis plan. The following is an example of the evaluation framework of the evaluation.

Training program objectives	Evaluation objectives	Indicators	Data collection plan				Task-in-charge
			Source of data (include sample size)	Method of data collection	Types of tools	Frequency & period of data collection	
GOAL: The training program aims to ensure sustained improvements in farm productivity through the development and use of appropriate and environment-friendly technologies.	To determine the effects of the different technologies on farm productivity, labor allocation of men and women and farm biodiversity.						
OBJECTIVE: The training program aims to develop the leadership and management capacities of key leaders of the farmers' association.	To determine the improvements in the management of the farmers' association after the training.						
SPECIFIC OBJECTIVE (EXPECTED OUTPUT) At the end of the training, participants will be able to identify the basic principles behind sustainable agriculture.	To determine what participants learned through the training.To determine participants' reactions to the course content.						

The monitoring and evaluation plan



Other elements of the evaluation plan

Evaluation or research plans often neglect to articulate four essential procedures. The consequences of this oversight may be underutilized data. These procedures must be included in the evaluation plan so that time and resources are correspondingly allocated.

- **Data processing and analysis** - this involves a series of inter-related steps that lead to the understanding of the evaluation results. It is a process of extracting meaningful information relevant to the evaluation question and determining the implications of the results to the training program. Systems and tools that will be used data processing and analysis should be included in the evaluation plan.
- **Data validation** - refers to the process in which the initial evaluation results are presented to stakeholders, giving them a chance to enhance, modify, clarify or refute the findings. This is commonly done through workshops where results are presented and discussed. Routing draft reports may be another (though less effective) method.

Validation is necessary to ensure the accuracy of the analysis to ensure that all stakeholders have a shared understanding of the evaluation results. Specific steps for data validation should be explicitly outlined in the evaluation plan.

- **Documentation and sharing of results** - there are a number of individuals (within or outside your own organization) and other development organizations that may benefit from the findings of the evaluation. Sharing these results can be done through various forms: reports that are limited in circulation, publication, video, and conferences are some ways by which information can be disseminated. Planning the documentation of evaluation findings would ensure adequate resources. It also affords the evaluation team ample time to choose the content and design the format that suit the purposes and audience of the sharing.
- **Information use** - Ultimately, results of training evaluation should lead to decisions and actions on training programs. This is possible if there are procedures by which the training team can reflect upon the results and the implications of these findings on training activities/programs.





The monitoring and evaluation plan

Lessons and recommendations documented in the evaluation report are good starting points for the training team's discussions. Such lessons and recommendations should be carried over to the team's regular planning or re-planning sessions so that they can be considered in future activities.

Components of the monitoring plan

A monitoring plan for a training program has the same elements found in an evaluation plan - (1) monitoring objectives/questions, (2) identified indicators and types of data requirements, (3) method and tools for data collection (4) systems and tools for data processing and analysis and (5) systems and tools for data validation, sharing and utilization.

The difference between the two lies in the focus of the questions to be answered through the data collection process. Research questions in a monitoring plan focus on the smooth implementation of the training program, the identification of emergent problems and issues and the identification of appropriate solutions to these problems. Monitoring questions are based on the implementation plan. For instance, we may want to know:

- Were the planned training content and methodologies followed?
- What deviations from the plan were made, and why?

Data collection tools and procedures including the time frame for data collection must be appropriate to the purpose of the monitoring activity. In most cases, monitoring data have to be collected and analyzed within a limited time span. Hence, methods that would allow immediate feedback are most appropriate so that lessons from monitoring can be incorporated in the next stages of the training program implementation.

One way of strengthening the link between monitoring and implementation is to time the monitoring schedule with periodic re-planning of program activities. For activities with shorter duration, reflection sessions between major activities may appropriately capture the lessons that should guide subsequent steps.

The monitoring and evaluation plan



Implementing the M&E plan

The M&E plan guides the implementation of the M&E activities on the ground. Smooth conduct of these activities requires proper management and coordination from the preparation stage to the presentation of findings in planning workshops.

Those responsible for M&E must ensure that all materials have been prepared; team members have received proper orientation on the M&E plan and adequate training on how to conduct M&E. Stakeholders should also be informed of the schedule and purpose of the M&E activities. They should understand why it is necessary, and, as much as possible, be part of the process of analyzing and using the results.

Time is a critical factor in the implementation of the M&E plan. Involvement of stakeholders should not take them away from their regular responsibilities for long periods. M&E implementation schedule should provide timely information for decision-making. The concern for speed, however, should be balanced by corresponding concern for the quality of the M&E.

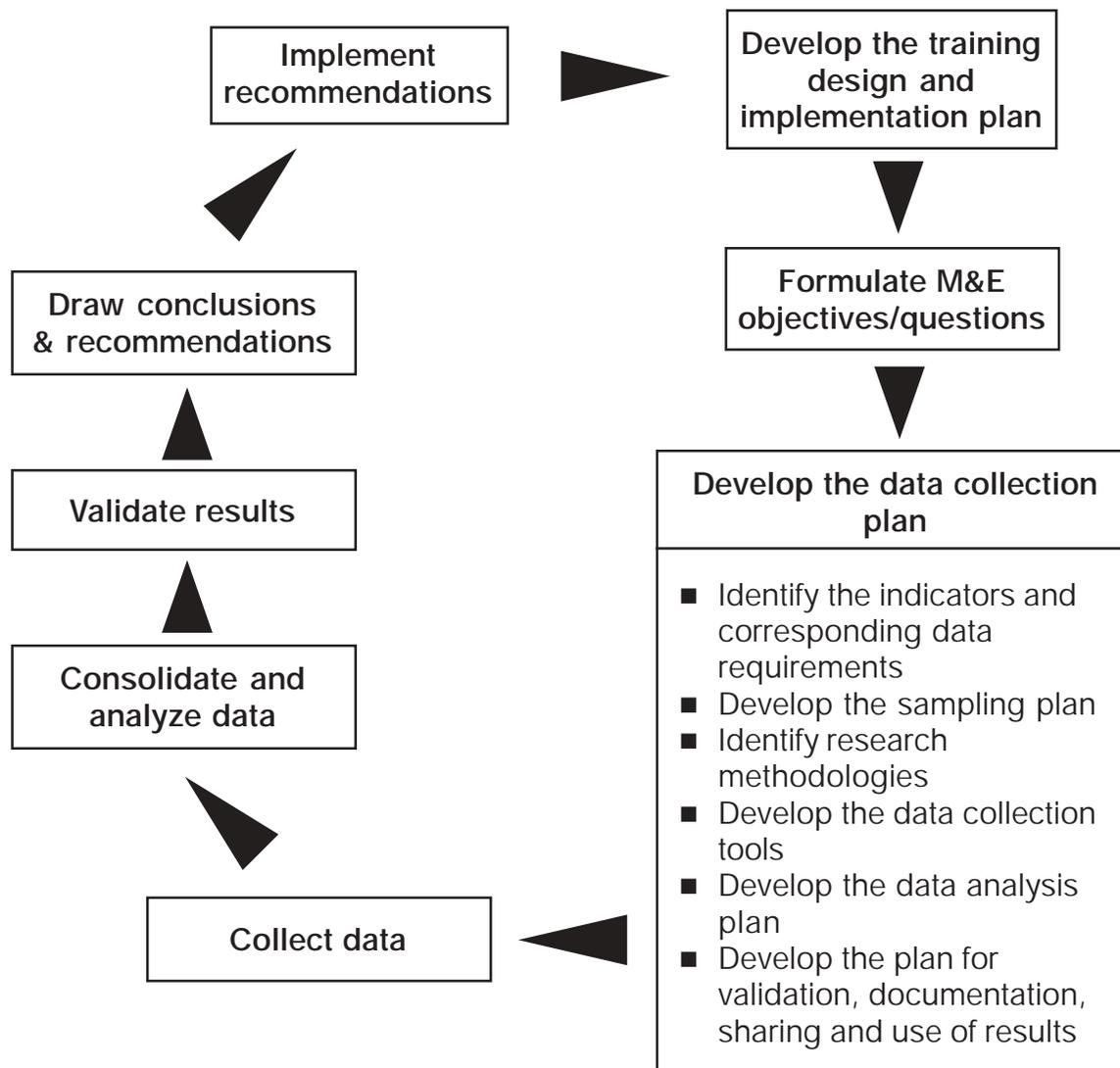
The monitoring and evaluation plan



Attachment 1

OHT

Monitoring and Evaluation Cycle



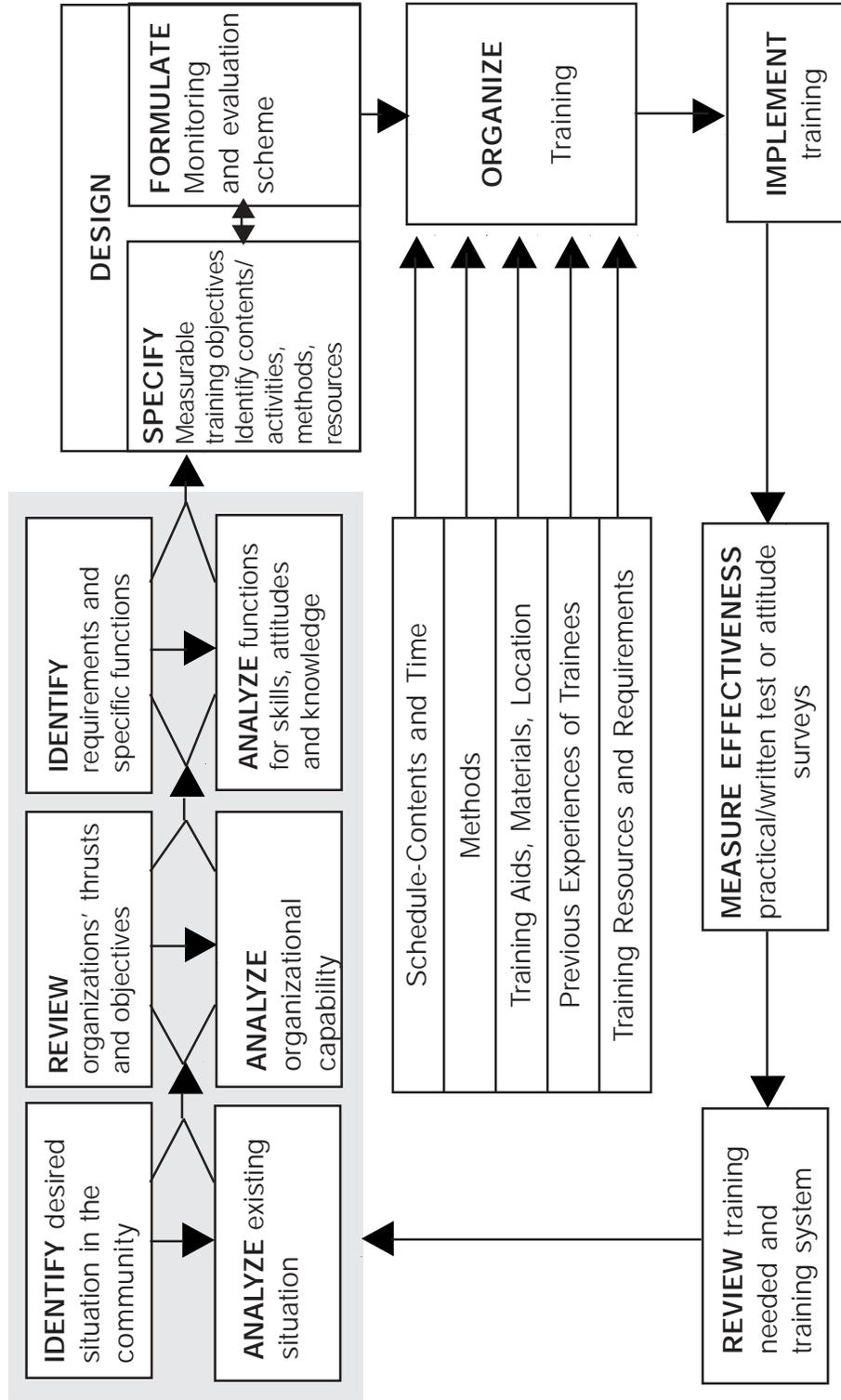


The monitoring and evaluation plan

Attachment 2

OHT

Systematic approach to training program development¹ Training needs and analysis



¹ Adapted from Systematic Approach to Training Design, Walton, Ron. EITB, London by Espineli, Marissa B., International Institute of Rural Reconstruction (IIRR)

The monitoring and evaluation plan



Attachment 3

OHT

Example of developing training evaluation objectives

Hierarchy of objectives	Training program objectives	Evaluation objectives
Training program goal (long term goals with broad scope)	The training program aims to ensure sustained improvements in farm productivity through the development and use of appropriate and environment-friendly technologies.	To determine the effects of the different technologies on farm productivity, labor allocation of men and women and farm biodiversity.
Training program objectives (medium term objectives with narrower focus)	The training program aims to develop the leadership and management capacities of key leaders of the farmers' association.	To determine the improvements in the management of the farmers' association after the training.
Training outputs (short term targets with very specific focus)	At the end of the training, participants will be able to identify the basic principles behind sustainable agriculture.	To determine what participants learned through the training. To determine participants' reactions to the course content.



The monitoring and evaluation plan

Attachment 4

OHT

Format for planning a training program evaluation

Training program objectives	Evaluation objectives	Indicators	Data collection plan				
			Source of data (include sample size)	Method of data collection	Types of tools	Frequency & period of data collection	Task-in-charge
<p>Goal:The training program aims to ensure sustained improvements in farm productivity through the development and use of appropriate and environment-friendly technologies.</p>	<p>To determine the effects of the different technologies on farm productivity, labor allocation of men and women and farm biodiversity.</p>						
<p>Objective:The training program aims to develop the leadership and management capacities of key leaders of the farmers' association.</p>	<p>To determine the improvements in the management of the farmers' association after the training.</p>						
<p>Specific objective (expected output): At the end of the training, participants will be able to identify the basic principles behind sustainable agriculture.</p>	<p>To determine what participants learned through the training. To determine participants' reactions to the course content.</p>						

The monitoring and evaluation plan



Attachment 5

OHT

Sample monitoring plan

Program components that require monitoring	Monitoring objectives/ questions	Sources of information	Method of data collection	Use of information
Results of activities, project outputs	To determine: <ul style="list-style-type: none"> ■ What has been done ■ What has not been done but was planned ■ What problems have been encountered ■ How the problems have been addressed ■ How the external situation has changed ■ Other information relevant work of project 	<ul style="list-style-type: none"> ■ Regular records of activities ■ Supervision reports ■ Periodic reports ■ Staff, project partners and people affected by the work ■ Staff review records ■ Newspaper, radio 	<ul style="list-style-type: none"> ■ Review of documents ■ Meetings ■ Workshops ■ Staff review ■ Informal discussion ■ Observation ■ Surveys 	<ul style="list-style-type: none"> ■ Plan future work ■ Identify project successes ■ Identify opportunities to build on strengths ■ Identify problems and weaknesses, plan strategy ■ Review priorities ■ Identify training needs ■ Identify need for further information or research, review or evaluation
Project inputs	To determine <ul style="list-style-type: none"> ■ What is needed and where it can be found ■ When it is needed and when it will be available ■ Cost of inputs 	<ul style="list-style-type: none"> ■ Suppliers, other organizations, government, project manager and staff, other stakeholders 	<ul style="list-style-type: none"> ■ Review of documents ■ Informal discussion ■ Observation 	<ul style="list-style-type: none"> ■ Plan and schedule activities ■ Monitor costs and budget accordingly
Progress of program according to objectives	To determine <ul style="list-style-type: none"> ■ How the project as progressed towards achieving objectives ■ If the objectives still relevant? 	<ul style="list-style-type: none"> ■ Records ■ Project staff ■ Project partners ■ Key stakeholders 	<ul style="list-style-type: none"> ■ Review of documents ■ Meetings ■ Workshops ■ Staff review ■ Informal discussion ■ Observation ■ Surveys 	<ul style="list-style-type: none"> ■ Modify strategy and/or objectives if necessary ■ Feedback ■ Identify need for review or evaluation ■ Identify need for further information or improvements in monitoring systems



The monitoring and evaluation plan

Attachment 5 . . . continued

OHT

Program components that require monitoring	Monitoring objectives/questions	Sources of information	Method of data collection	Use of information
The way the program is managed, style of work	To determine: <ul style="list-style-type: none"> ■ How project decisions made. ■ If the people who are supposed to be involved really involved. ■ If the partners/ people affected by the work/program staff feel a sense of ownership over the program 	<ul style="list-style-type: none"> ■ Staff, project partners and people affected by the work 	<ul style="list-style-type: none"> ■ Meetings, discussions ■ Observation ■ Focus Group Discussion 	<ul style="list-style-type: none"> ■ Show need to change management style ■ Identify need to change methods to encourage more participation ■ Identify problems in relationships between partners/ people affected by the work/staff and address them
Background information on target population and context	To determine if <ul style="list-style-type: none"> ■ there been any significant political, economic, or environmental developments affecting target population? ■ there been any developments affecting the program? ■ the population changing in terms of the characteristics the program is hoping to influence? 	<ul style="list-style-type: none"> ■ Secondary data ■ Media materials ■ Other government and non-government organization ■ Key stakeholders ■ Program staff 	<ul style="list-style-type: none"> ■ Surveys ■ Sources of information about politics, economics ■ Meetings with other agencies, ■ Observation 	<ul style="list-style-type: none"> ■ On-going collection of baseline data which can be used to evaluate progress ■ Response to changing situation, rapid responses to emergencies ■ Keep in touch with relevant work by other agencies, government

The monitoring and evaluation plan



Attachment 6

OHT

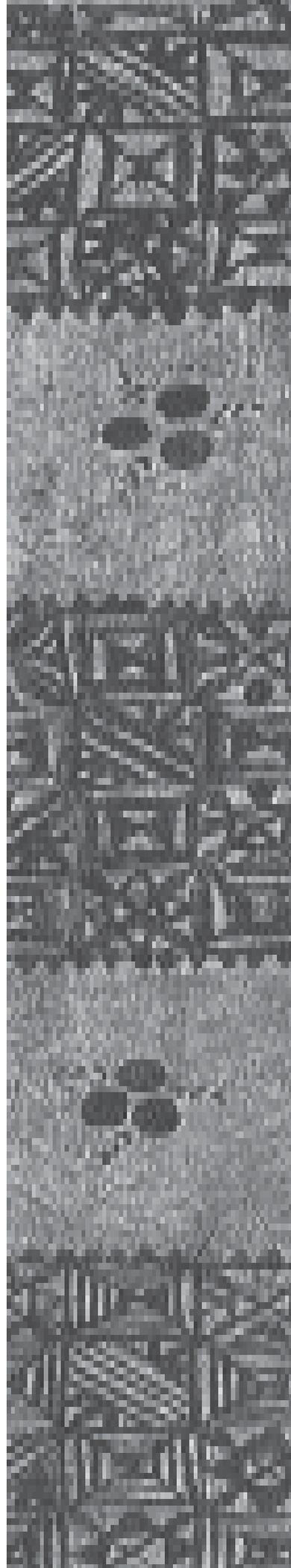
Format for planning the monitoring activities of a training program

Program components that require monitoring	Monitoring objectives	Indicators	Data collection plan				Task-in-charge	Use of information
			Source of data (include sample size)	Method of data collection	Types of tools	Frequency & period of data collection		
Results of activities/project outputs								
Project inputs								
Progress of program according to objectives								
The way the program is managed/style of work								
Background information on target population and context								

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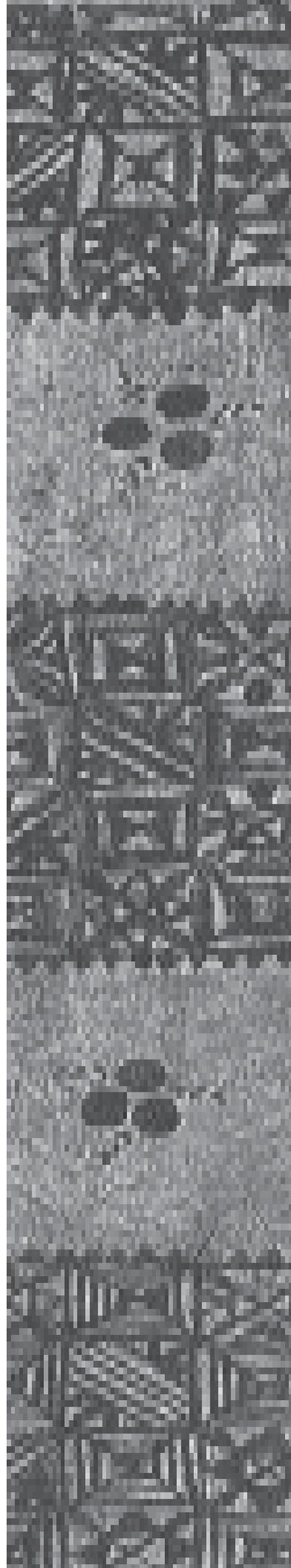
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<http://www.oneworld.net>

Fair trade issues

<http://www.fairtradeonline.com>

Community alliance with family farmers

<http://www.caff.org>

Green and Growing Education Projects, Inc.

<http://www.gatewest.net/~green/>

The Kerr center for SA Inc.

<http://www.kerrcenter.com/>

ETC Ecoculture, foundation for promotion of SA, providing training and consultancy services

<http://www.etcint.org>

International Institute of Rural Reconstruction

<http://www.iirr.org>

Discussion groups

Yahoo discussion group (not moderated) established by SATTP for trainers in SA to exchange experiences.

E-mail Yahoo Group: sattp@egroups.com

SAED-SHARE Sustainable Agriculture Education Conference. Moderated discussion group on Extension and Participation in SA development.

For subscription information, E-mail to: listproc@cornell.edu

PTD discussion group, (St Ullrich group). Log in and register at:

<http://groups.yahoo.com/group/PTD-forum>

Listserver for Participatory Natural Resource Management

<http://groups.yahoo.com/group/PNRM>

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Network and contacts for information and support on PTD

Agricultural University of Wageningen, Department of Communication & Innovation Studies, Hollandseweg 1, 6706 KN Wageningen, The Netherlands (Fax: +31-317-404791). **Contact: Niel Roling/Annemarie Groot**. Implements and supports research on all aspects of farmer learning and experimentation. Is a resource centre on the RAAKA approach. Coordinates international MSc course with major attention to PTD Links with universities in the South to support local capacity building.

Centre for Research and Information Exchange on Low-External-Input and Sustainable Agriculture (ILEIA), PO Box 64, 3830 AB Leusden, The Netherlands (+31-33-495-1779). **Contact: Peter Laban**. Produces a quarterly newsletter publishing numerous articles on PTD in agriculture. Publishes books and readers on PTD. Encourages and supports research on participatory approaches to the development of sustainable agriculture.

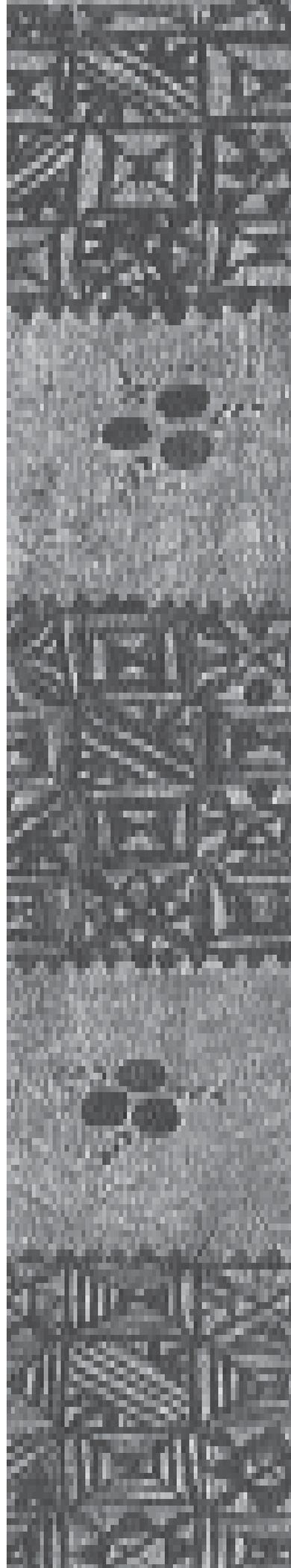
FAO Community Forestry Unit, Viale delle Terme di Caracalla, 1-00100 Rome, Italy (fax: +39-6-5225-5514). **Contact: Michelle Gauthier**. Works with the FTTP (see below) in developing and disseminating participatory approaches to forestry development. Has initiated research on farmers' own experimentation, which implemented in an number of countries in the South.

FARM-Africa Farmers' Research Project, PO Box 5474, Addis Ababa, Ethiopia (fax: +251-1-652566). **Contact: Alemaheyu Konde**. Uses PRA methods to analyze research and development needs of farmers in southern Ethiopia. Encourages farmer experimentation and research. Provides training support to NGOs and government agencies in PRA and PTD.

Forest, Trees and People Programme (FTPP), PO Box 7005, s-75007 Uppsala, Sweden (fax: +46-18-6734200). **Contact: Daphne Thuversson**. Part of the Community Forestry Unit of FAO, supports the development and spread of participatory research and planning methods with partners in the South. Publishes numerous conceptual and working papers, manuals, case studies and videos, and the Forest, Trees & People Newsletter (in English, French and Spanish), which often contains articles on participatory approaches to agricultural development.

Institute of Development Studies (IDS), University of Sussex, Brighton BN 1 9RE, UK (fax: +44-1274 621202). **Contact: Robert Chambers**. One of the leading institute, together with IIED, in developing disseminating RRA/PRA methods. Produces numerous publications, including bibliographies on the application of PRA in agriculture, forest management and irrigation.

Intermediate Technology Development Group (ITDG), Myson House, Railway Terrance, Rugby CV21 3HT, UK (fax: +44-1788 540270). **Contact: Simon Croxton**. Considerable experience in promoting and implementing PTD approaches in agricultural development. Has a special interest in the use of PTD in the development Appropriate Technologies tools, equipment and techniques. Issues the quarterly journal Appropriate Technology, which includes articles related to PTD.



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International Institute for Environment and Development (IIED), 3 Endsleigh Street, London WC1H0DD, UK (fax: +44-171-388 2826). **Contact: John Thompson** (Sustainable Agriculture Programme). Many years' experience in applying participatory research and development approaches. Facilitates PRA training and gives long-term support to government institutions and NGOs. Produces the periodicals PLA Notes, training materials (including audio-visuals) and a range of RRA/PRA reports.

International Institute for Rural Reconstruction (IIRR), Silang, Cavite, The Philippines (fax: +63-969 9937). **Contact: Scott Killough**. International NGO that implements projects with a strong PTD perspective in a great number of countries; provides international PTD training and consultancy supports; run a well-established resource centre. Regional offices in Africa (Nairobi), Latin America (Quito), USA (New York) and Europe (Brussels).

Landwirtschaftliche Beratungszentrale (LBL), CH-8315 Lindu, Switzerland (fax: +41-52-354 9797). **Contact: Ueli Scheuermeier**. Participatory approaches are central to LBL's concept of agricultural extension. Provides PRA and PTD training and advisory services. Supports PTD programmes in Africa and Asia.

Natural Resources Institute (NRI), Central Avenue, Chatham Maritime, Kent ME4 4TB, UK (fax: +44-1634-880066/77). **Contact: Barry Pund/Adrienne Martin**. Supports participatory research and PTD programmes in various parts of the world. Provides consultancy services and training support. Encourages research-NGO linkages.

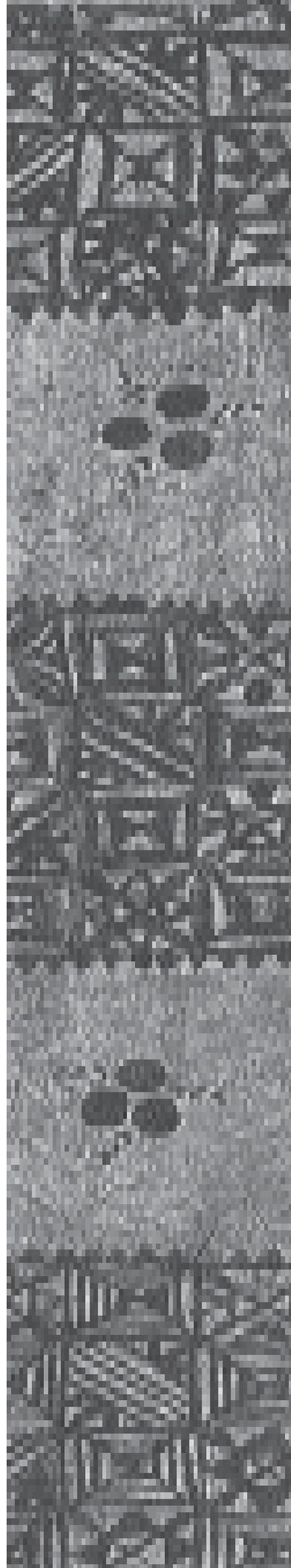
Overseas Development Institute (ODI), Portland House, Stag Place, London SE1E 5DP, UK, (fax: +44-171-393 1699). **Contact: John Farrington**. Implements research to support policy development re: Farmer Participatory Research. Publishes numerous publications on FPR. Runs an international agricultural extensions and research network and produces various network papers.

West Africa Rural Foundation (WARF), CP 13, Dakar-Fann, Senegal (fax: +221-245755). **Contact: Fadel Diame**. Promotes methods of participatory technology development and natural resource management in Senegal, Gambia, Guinea Bissau and Mali. Publishes multilingual (French, English, Portuguese) newsletter L'Atelier, as well as manuals, reports and audiovisual materials. Gives training courses and advises rural organizations.

World Neighbors (4127 NW Street, Oklahoma, OK 73120-8869, USA (fax: +1-405-752-9393). **Contact: Jethro Petit**. Aims at strengthening local capacities for community development in Asia, Africa and Latin America. Has wide experience in participatory approaches to development, including farmer-led experimentation. Publishes training materials and audio-visuals suitable for use by village-level leaders, and biannual newsletter World Neighbors in Action in English, French and Spanish.

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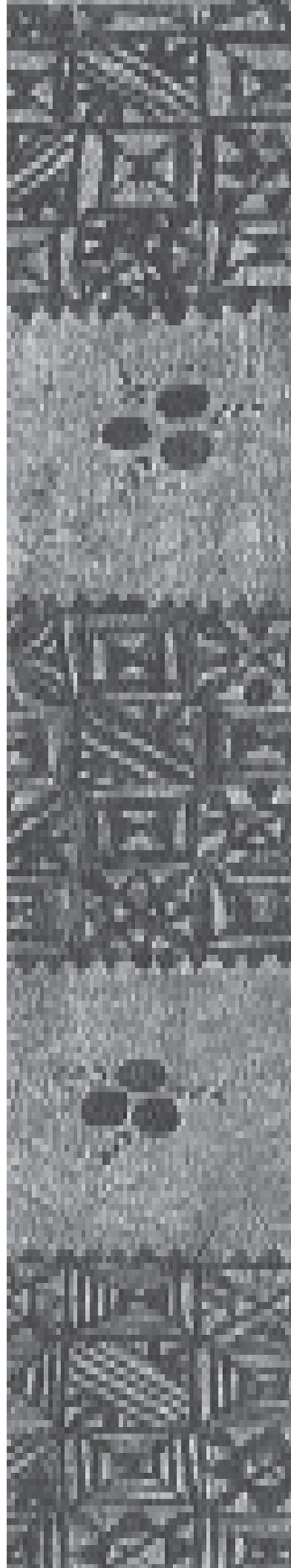
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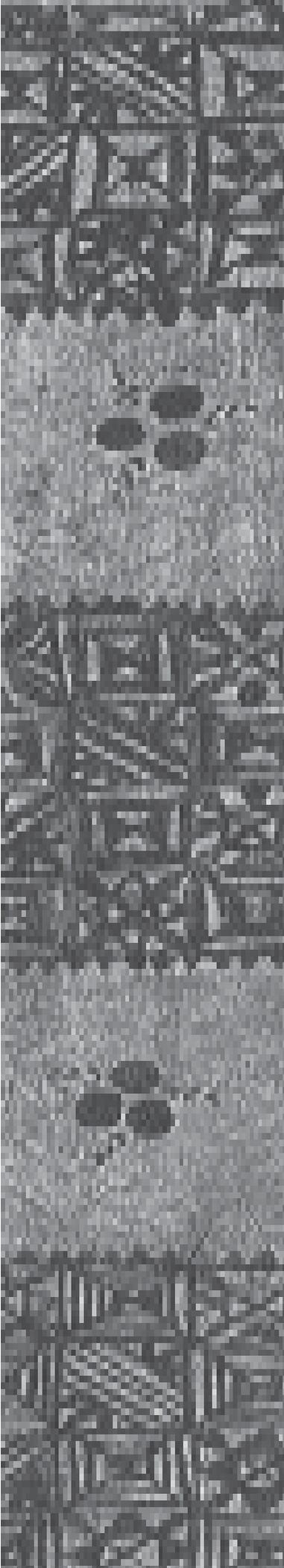
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