



Feinstein International Center

Strengthening the humanity and dignity of people in crisis through knowledge and practice



Participatory Impact Assessment A Guide for Practitioners

Andrew Catley – John Burns – Dawit Abebe – Omeno Suji



Tufts
UNIVERSITY

Gerald J. and Dorothy R.
Friedman School of
Nutrition Science and Policy

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ABBREVIATIONS

ALNAP	Active Learning Network for Accountability and Performance
CAHW	Community Animal Health Worker
CBO	Community Based Organization
CI	Confidence Interval
GIRA	Gokwe Integrated Recovery Action (project)
HAP-I	Humanitarian Accountability Partnership
HH	Household
IIED	Institute for Environment and Development
M&E	Monitoring and Evaluation
NGO	Non Governmental Organization
OLP	Organizational Learning Partnership
PIA	Participatory Impact Assessment
PRA	Participatory Rural Appraisal

INTRODUCTION

Purpose of this guide

The Feinstein International Center has been developing and adapting participatory approaches to measure the impact of livelihoods based interventions since the early nineties. Drawing upon this experience, this guide aims to provide practitioners with a broad framework for carrying out project level Participatory Impact Assessments (PIA) of livelihoods interventions in the humanitarian sector. Other than in some health, nutrition, and water interventions in which indicators of project performance should relate to international standards, for many interventions there are no ‘gold standards’ for measuring project impact. For example, the Sphere handbook has no clear standards for food security or livelihoods interventions. This guide aims to bridge this gap by outlining a tried and tested approach to measuring the impact of livelihoods projects. The guide does not attempt to provide a set of standards or indicators or blueprint for impact assessment, but a broad and flexible framework which can be adapted to different contexts and project interventions.

Consistent with this, the proposed framework does not aim to provide a rigid or detailed step by step formula, or set of tools to carry out project impact assessments, but describes an eight stage approach, and presents examples of tools which may be adapted to different contexts. One of the objectives of the guide is to demonstrate how PIA can be used to overcome some of the inherent weaknesses in conventional humanitarian monitoring evaluation and impact assessment approaches, such as; the emphasis on measuring process as opposed to real impact, the emphasis on external as opposed to community based indicators of impact, and how to overcome the issue of weak or non-existent baselines. The guide also aims to demonstrate and provide examples of how participatory methods can be used to overcome the challenge of attributing impact or change to actual project activities. The guide will also demonstrate how data collected from the systematic use of participatory tools can be presented numerically, and can give representative results and provide evidence based data on project impact.

Objectives of the Guide

- 1. Provide a framework for assessing the impact of livelihoods interventions**
- 2. Clarify the differences between measuring process and real impact**
- 3. Demonstrate how PIA can be used to measure the impact of different projects in different contexts using community-identified impact indicators**
- 4. Demonstrate how participatory methods can be used to measure impact where no baseline data exists**
- 5. Demonstrate how participatory methods can be used to attribute impact to a project**
- 6. Demonstrate how qualitative data from participatory tools can be systematically collected and numerically presented to give representative results of project impact**

WHY BOTHER MEASURING IMPACT?

The ability to define and measure humanitarian impact is essential to providing operational agencies with the tools to systematically evaluate the relative efficacy of various types of interventions. Aggregating lessons learned across organizations, operations, and time is critical to the creation of an evidence base which can continue to inform the sector about improvement. Institutionalizing good practice in the systems and structures of relief organizations is critical to their ability to meet the growing demands on the sector and the needs of people made vulnerable by disasters and humanitarian crises. Similarly, communicating the effectiveness of impact is necessary for the humanitarian sector to respond to increasing pressure from donors and the general public to demonstrate the results of its efforts (Fritz Institute, 2007).



Much of the academic literature suggests that in recent years there has been little incentive for humanitarian organizations to measure the impact of their work (Roche 1999, Hofmann et al 2004, Watson, 2008). However, the emergence of initiatives such as the Humanitarian Accountability Partnership (HAP-I) the Active Learning Network for Accountability and Performance (ALNAP) the Organizational Learning Partnership (OLP) and the Fritz Institute Humanitarian Impact Project have catalyzed a growing interest and demand for greater effectiveness, learning and accountability within the humanitarian sector. As a result of this interest, organizations are under growing pressure to demonstrate and measure the real impact of their projects on the livelihoods of the recipient communities.

Although many if not all humanitarian agencies claim to be having an impact, these claims are rarely substantiated with rigorous evidence based data (Hofmann et al 2004, and Darcy 2005), and the 'gap between the rhetoric of agencies and what they actually achieve is increasingly met with skepticism and doubt amongst donors and other stakeholders' (Roche C, 1999). Evidence to support claims of project impact is largely supported by information from agencies' own monitoring and evaluation (M&E) systems and anecdotes from project monitoring reports. Most organizations M&E systems focus on measuring the process of project implementation and service delivery, with the emphasis being on upward financial accountability. Although this monitoring of project activities is an important management function and the information is certainly useful in attributing impact to a given intervention, such M&E data rarely tells us much about the real impact of a project on the lives of project clients or participating communities.

A well designed impact assessment can capture the real impacts of a project, be they positive or negative, intended or unintended on the lives of the project participants. An impact assessment can therefore demonstrate whether the money allocated to a project is actually having an effect on the lives of the project participants. This alone should create a greater demand from donors and greater incentives for implementing agencies to measure the results of their work. In the experience of the Feinstein Center, even where the results of an assessment show that impact is not as significant as expected, or where negative impacts are revealed, honesty in reporting can be appreciated by donors, as it suggests a willingness by the implementing agency to learn from its programming, whereas less transparent and defensive reporting tends to evoke skepticism.

The experience of the Feinstein Center shows that where project participants are included in the impact assessment process, this can create an opportunity to develop a learning partnership involving the donor, the implementing partner, and the participating communities. The impact assessment process can create space for dialogue, and the results can provide a basis for discussions on how to improve programming and where best to allocate future resources. Results from some impact assessments supported by the Feinstein Center demonstrate unintended impacts that differ from, and are possibly more significant than the expected impact associated with the stated objectives of the project. If these assessments had not been carried out these impacts would not have been captured or documented, and the opportunity to use this information in designing future projects would have been lost.

Aside from the internal organizational learning benefits derived from measuring impact, the results from impact assessments, when rigorously applied, can be used as a powerful advocacy tool to influence the formulation of policy and best practice guidelines for humanitarian programming. Experience from Ethiopia shows that evidence based data derived from impact assessments was successfully used to develop Government endorsed best practice guidelines for drought response interventions in the livestock sector (Behnke et al 2008).

A more systematic approach to impact measurement in the humanitarian sector can only help to improve accountability, not only to donors and external stakeholders, but more importantly to the recipients of humanitarian aid. It will also answer the fundamental questions that are rarely asked, what impact are we really having, and do these aid interventions and activities really work? This can only lead to better programming and a more effective use of humanitarian funds. Overall, a greater emphasis on measuring and demonstrating impact can only enhance the image and credibility of donors, and humanitarian organizations within the sector. Indeed, as Chris Roche (1999, 3) argues; “In the long term the case for aid can only be sustained by more effective assessment and demonstration of its impact, by laying open the mistakes and uncertainties that are inherent in development work, and by an honest assessment of the comparative effectiveness of aid vis-à-vis changes in policy and practice”.

What is Participatory Impact Assessment?

Participatory Impact Assessment (PIA) is an extension of Participatory Rural Appraisal (PRA) and involves the adaptation of participatory tools combined with more conventional statistical approaches specifically to measure the impact of humanitarian assistance and development projects on people's lives. The approach consists of a flexible methodology that can be adapted to local conditions. The approach acknowledges local people, or project clients as experts by emphasizing the involvement of project participants and community members in assessing project impact – and by recognizing that 'local people are capable of identifying and measuring their own indicators of change' (Catley, 1999).

All the definitions of impact in either the development or humanitarian assistance field involve the concept of change, which can be positive or negative.

Consistent with this, a project level PIA tries to answer the following three key questions (Watson, 2008):

- 1. What changes have there been in the community since the start of the project?**
- 2. Which of these changes are attributable to the project?**
- 3. What difference have these changes made to people's lives?**

In contrast to many traditional project M&E approaches, PIA aims to measure the real impact of a project on the lives of the project participants. Most evaluations tend to focus on measuring aspects of project implementation, such as the delivery of inputs and services, the construction of project infrastructure, the number of trainings carried out or the number of people trained. PIA tries to go a step further by investigating if and to what extent these project activities actually benefited the intended recipients, and if these benefits can be attributed to the project activities.

The use of participatory methods in PIA allows impact to be measured against qualitative indicators, such as changes in dignity, status, and well being, or changes in the level of community participation throughout the implementation of a given project. The use of participatory ranking and scoring methods enables these types of qualitative indicators, often based on opinions or perceptions to be presented numerically. Comparative scoring and ranking methods can be used in PIA to assess project attribution, by comparing both the project and non-project factors that contributed to any assessed change. This is particularly useful where the use of a control group is unethical or impractical, which is often the case in the context of humanitarian assistance projects. Comparative scoring methods used in PIA can also be used to develop a retrospective baseline against which to measure impact. Again the lack of baseline data is a common feature of humanitarian assistance projects, particularly those being implemented in an emergency setting.

The PIA approach emphasizes the standardization and repetition of participatory methods, helping to improve the reliability of the information, but ideally leaving enough scope for the open-ended and flexible inquiry typical of PRA. In this respect PIA tries to find a balance between systematic methods and the richness of qualitative inquiry.

In summary, a systematic, well designed PIA can assist communities and NGOs to measure impact using their own indicators and their own methods. It can also overcome the weaknesses inherent in

many donor and NGO monitoring and evaluation systems which emphasize the measurement of process and delivery, over results and impact.



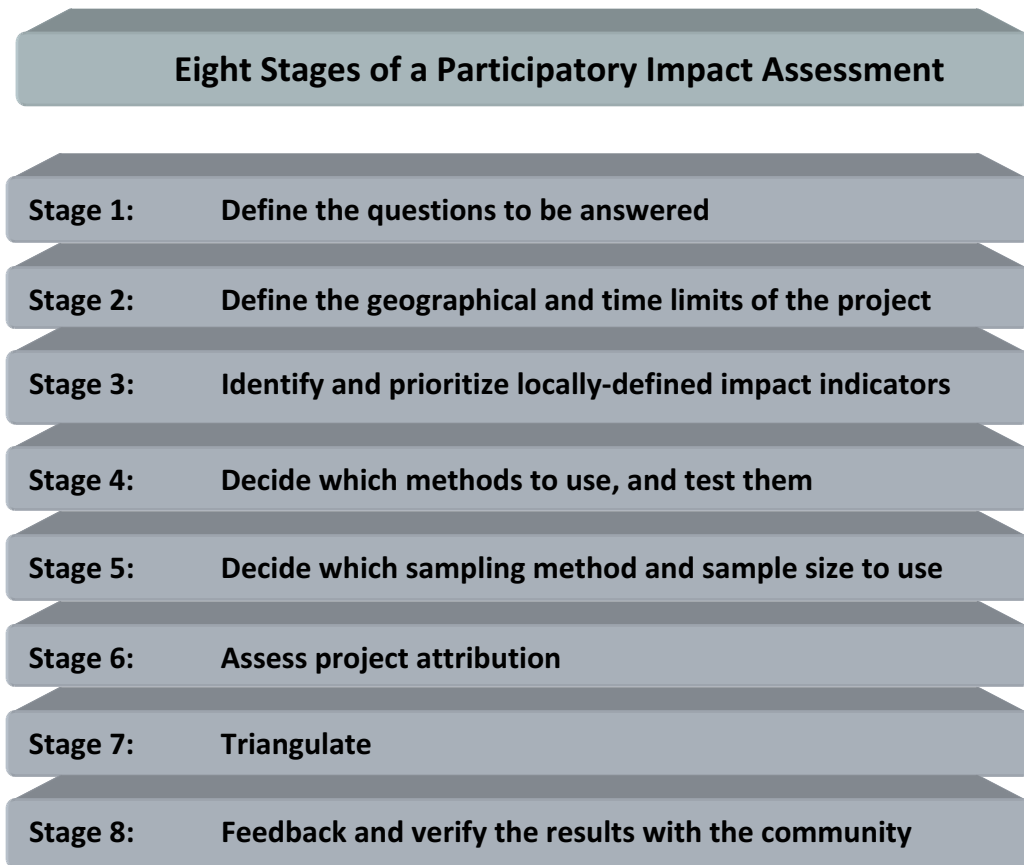
Focus Group Discussions during a PIA in Zimbabwe

AN EIGHT STAGE APPROACH TO DESIGNING A PARTICIPATORY IMPACT ASSESSMENT

BACKGROUND

The Feinstein International Center’s approach to assessing impact emphasizes the participation of project households, and involves an eight step assessment process. The proposed approach to PIA aims to provide a generic, flexible methodology, adaptable to local conditions which is based on the notion of combining participatory approaches and some basic epidemiological or ‘good science’ principles. The PIA methodology draws on various bodies of experience such as:

- The ‘soft systems’ participatory assessment approaches of Action-Aid Somaliland during the mid nineties
- Reviews of PIA by the International Institute for Environment and Development (IIED)
- Feinstein International Center’s use of PIA, particularly in complex emergencies and as a strategy for informing policy reform
- Work on the reliability and validity of participatory epidemiology by IIED and the Feinstein International Center



STAGE ONE: IDENTIFYING THE KEY QUESTIONS

The most important and often the most difficult part of designing an impact assessment is deciding which questions should be answered. Defining the questions for an impact assessment is similar to defining the objectives of a project - unless you know specifically what you are trying to achieve, you are unlikely to achieve it. Many assessments try to answer too many questions and consequently produce poor quality results. Although it is tempting to try and capture as much information about a given project as possible, there is always a risk that in doing so, you will collect too much information to effectively manage and analyze. It is better to limit the assessment to a maximum of five key questions and answer these well.

If you have already worked with communities to identify their impact indicators at the beginning of the project, the assessment will focus on the measurement of these indicators and assessment of project attribution. If you are using a retrospective approach, discuss the impact assessment with the project participants, and jointly define the questions with them.

Example: Provision of sheep or goats to female headed households

For such a project, the impact assessment may only need to answer three questions.

1. How has the project impacted, if at all, on the livelihoods of the women involved in the project?
2. How has the project impacted, if at all, on the nutritional status of the women's children?
3. How might, the project be changed to improve impact in the future?



3. After 30 minutes, check on progress. Give the group more time if they wish.
4. When the group is happy that the map is finished, ask them to explain the key features of the map. The process of “*interviewing the map*” enables assessors to learn more about the map and pursue interesting spatial features. As mentioned a map can be a useful focus tool for discussions and follow-up questioning. It is important that one member of the team takes notes during this discussion. During this part of the exercise ask the participants to include any project infrastructure on the map in relationship to the other features. For example if the project constructed wells or a cereal bank, or established a community vegetable garden, ask the participants to illustrate these on the map. In many cases these may already have been included, which already tells us something about the importance of the project from the perspective of the participants. Similar or other types of physical assets may have been established by the government or another NGO in the project area and it is important to also include these on the map.
5. It is often useful to add some kind of scale to the map. This can be done by taking a main human settlement and asking how many hours it takes to walk to one of the boundaries of the map. In less remote communities people may already know how many kilometers it is from one settlement to another and can define this on the map. A north-south orientation can also be added to the map, or arrows pointing to a major urban center or natural feature lying outside of the boundary of the map.
6. Make two large copies of the map on flip chart paper. Give one copy to the group of participants.

When maps are used to show seasonal variations, such as flooding, livestock movements, or crop production, these can be cross-checked using seasonal calendars.

The increasing use of computer scanners and digital cameras means that copies of maps can easily be added to reports.

Examples of Maps

FIGURE 2.1 COMMUNITY MAP NEPAL

Map of Pyutar Village Committee area, Ward 9 by Krishna Bahadur and Iman Singh Ghale

This map was produced by two farmers in a sedentary community in Nepal. The map shows the location of the main livestock types, areas of cultivation and other features

(source: Young, Dijkeme, Stoufer, Shrestha and Thapa, 1994, PRA Notes 20)

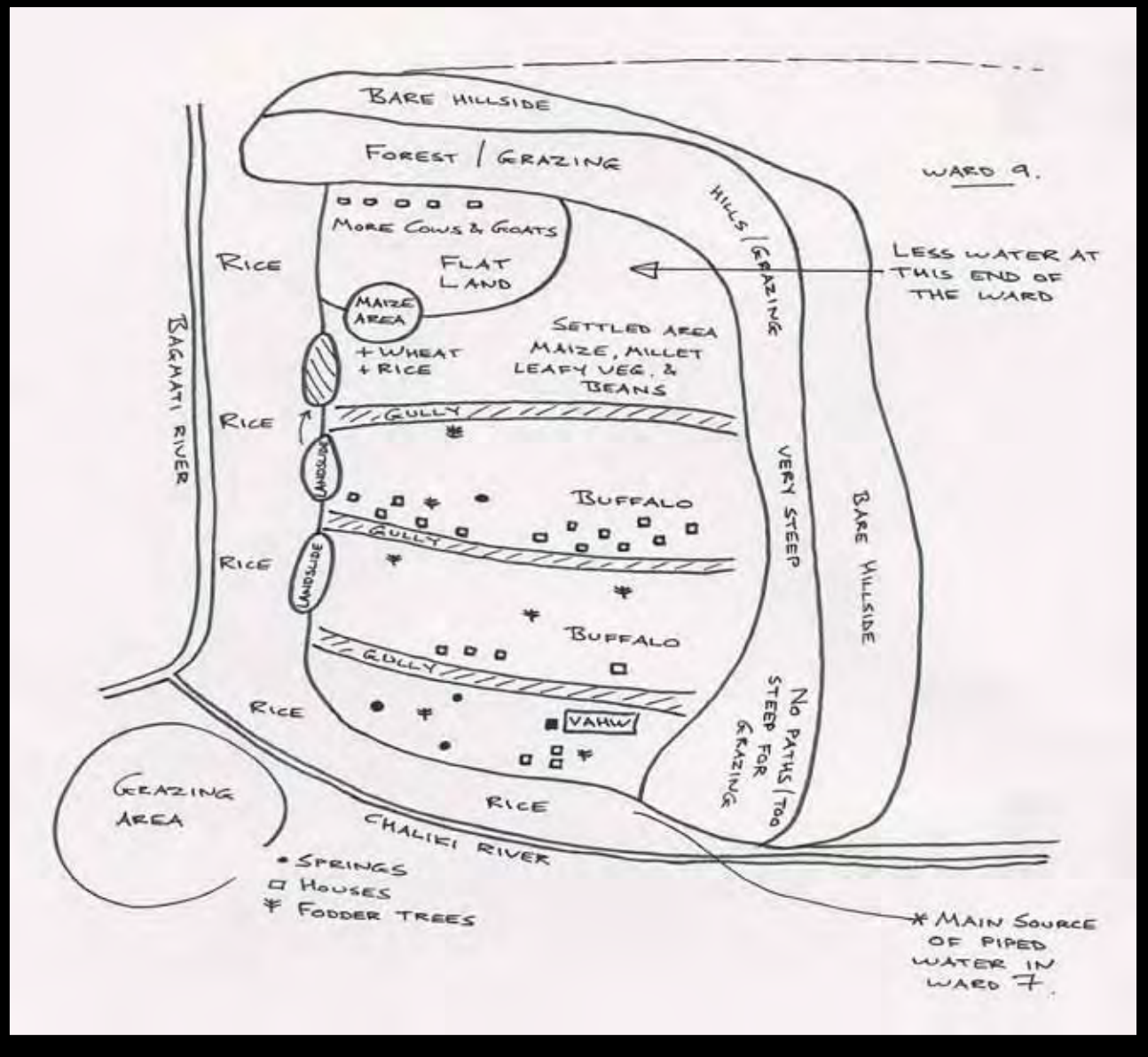
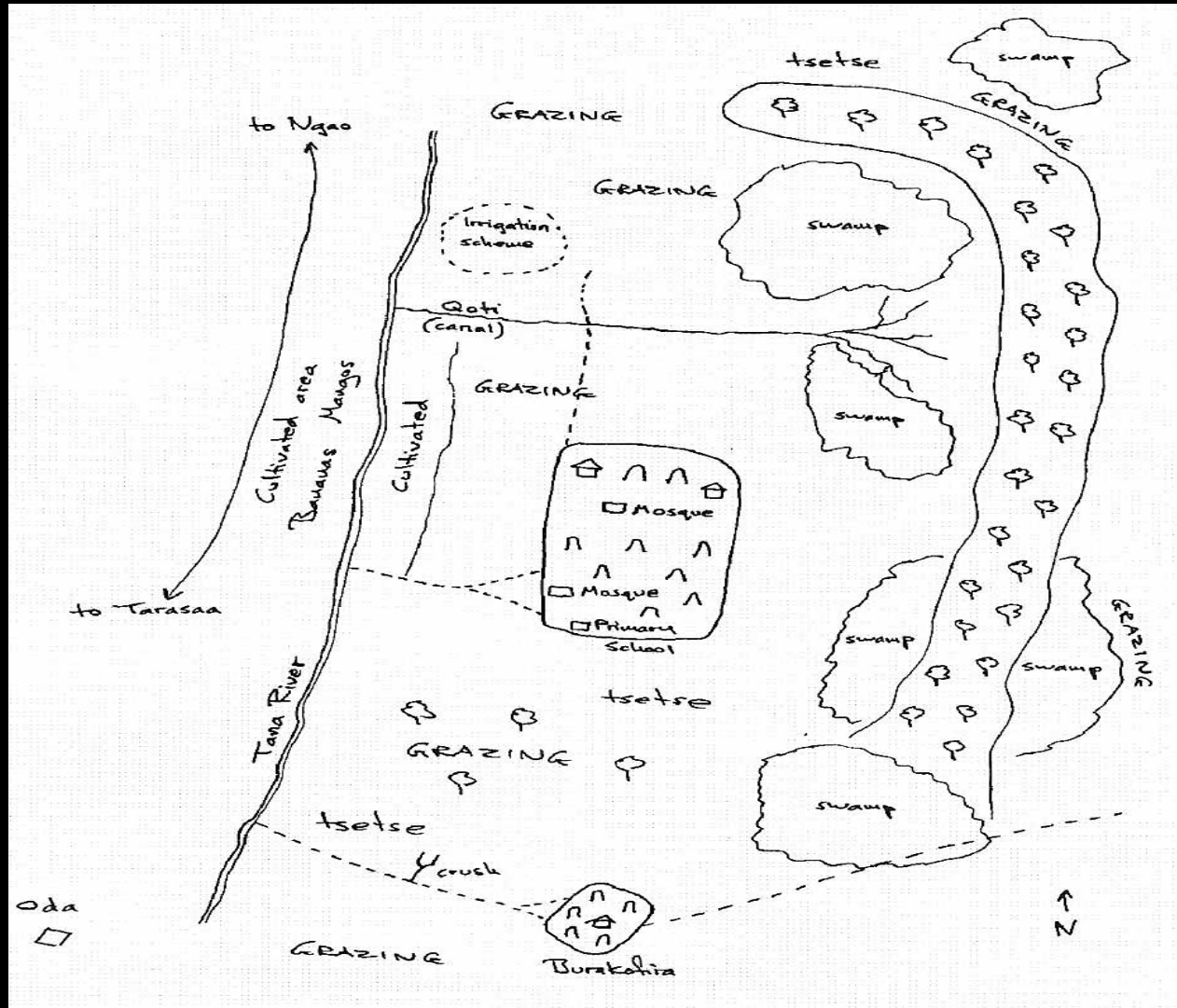


FIGURE 2.2 GRAZING MAP KENYA

Map of Kipao village, Garsen Division, Tana River District.

This map was constructed by Orma herders. It shows the dry season grazing areas for cattle around Kipao and proximity to tsetse-infested areas. During the wet season, the area became marshy and cattle were moved to remote grazing areas.

(Source: Catley, A. and Irungu, P. (2000).

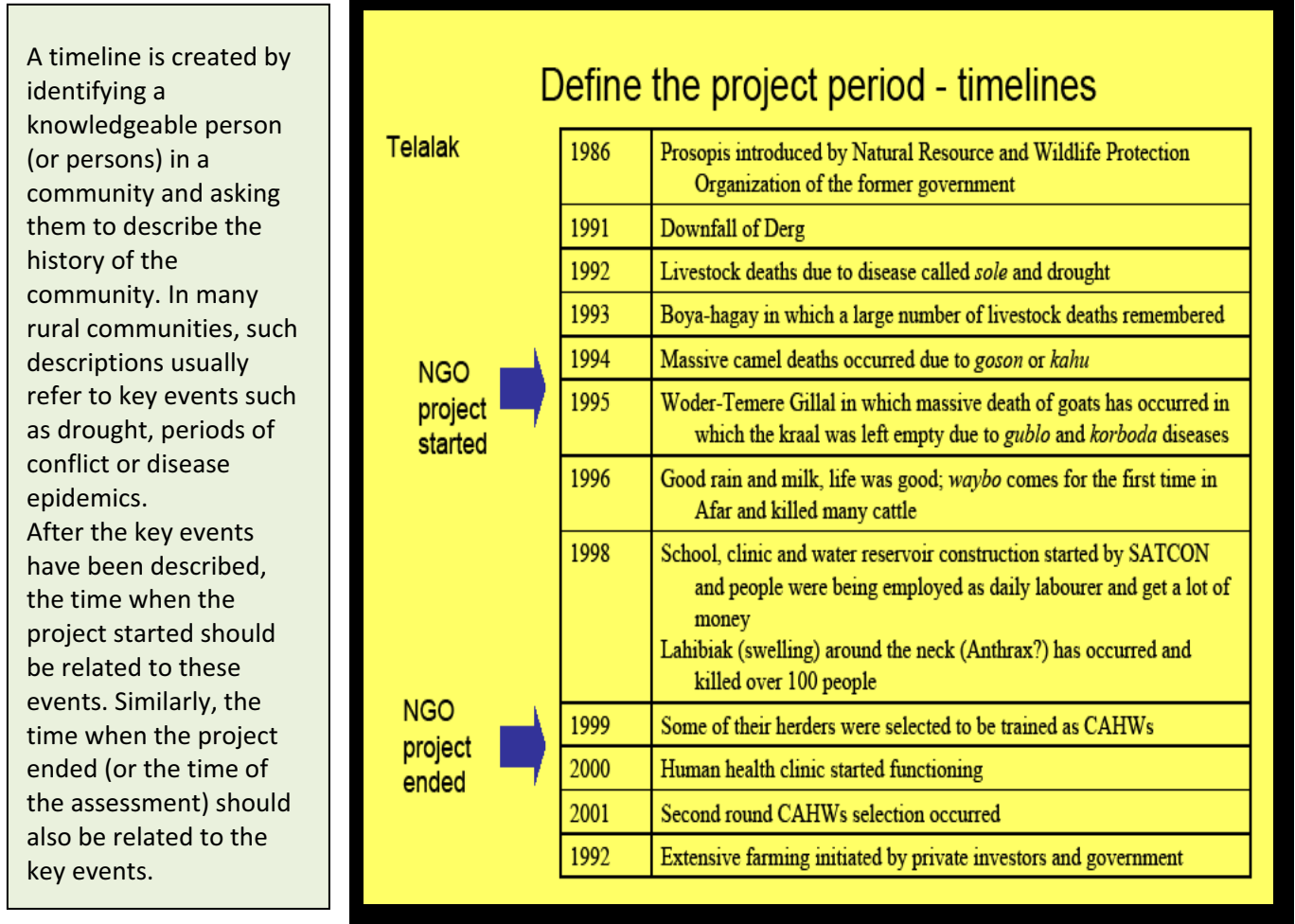


Defining the project period – Timelines

Defining the project boundaries in time, sometimes called the ‘temporal boundary’ aims to ensure that everyone is clear about the time period that is being assessed.

A timeline is an interviewing method which captures the important historical events in a community, as perceived by the community themselves. In impact assessments, timelines can be used to define the temporal boundaries of a project. In other words, the timeline helps to clarify when the project started and when the project ended, or how long it has been going on for. This method is useful in helping to reduce recall bias.

FIGURE 2.3 TIMELINE ETHIOPIA

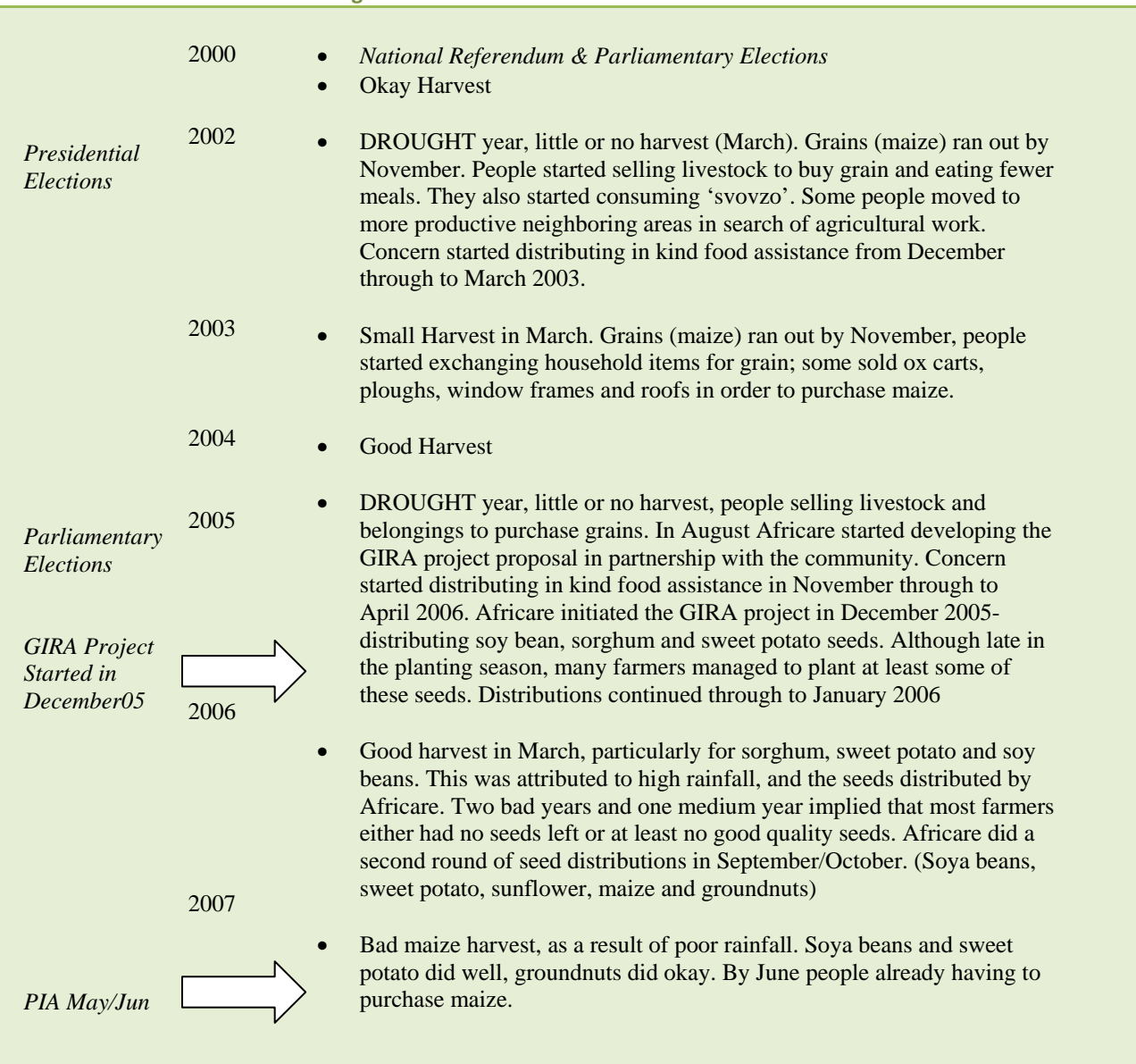


Source: Participatory Impact Assessment Team, 2002

The following timeline was produced by five key informants in a rural community in Zimbabwe participating in a drought recovery project. Key political events were used as reference points for the timeline. The timeline shows when the project started, and a consequent improvement in food security shortly thereafter. Note that the timeline also shows external factors that might have contributed to food security, such as improved rainfall and other NGO interventions. Where applicable a timeline should highlight non project factors in order to help isolate the impact of the project from other relevant variables.

FIGURE 2.4 TIMELINE ZIMBABWE

Timeline of recent events - Nemangwe



GTZ have also been carrying out restocking interventions in the same wards as the Africare project however, there is no indication of any overlap in terms of assisted communities or individual household recipients.

Source: Burns and Suji, 2007

STAGE THREE: IDENTIFYING INDICATORS OF PROJECT IMPACT

A key feature of all types of project assessment is that inputs, activities, outputs, change or impact are measured. The things that we measure are usually called “**indicators**”.

There are two types of indicators as follows:

Process indicators sometimes called **outcome indicators** usually measure a physical aspect of project implementation, for example the procurement or delivery of inputs such as seeds, tools, fertilizer, livestock or drugs, the construction of project assets and infrastructure such as wells or home gardens, the number of training courses run by the project or the number of people trained. Process indicators are useful for showing that project activities are actually taking place according to the project work plan. However this type of indicator may not tell us much about the impact of the project activities on the participants or community.

Process indicators measure the implementation of the project activities. These indicators are usually quantitative e.g. ‘number of government staff trained’ is a process indicator which might be reported as ‘15 agricultural extension officers trained’.

Impact indicators measure changes that occur as a result of project activities. Impact indicators can be qualitative or quantitative, and usually relate to the end result of a project on the lives of the project participants. Most projects involve some sort of direct or indirect livelihoods asset transfer, such as infrastructure, knowledge, livestock, food or income. These asset transfers sometimes represent impact, but usually it is the benefits or changes realized through the utilization of these assets that represents a real impact on the lives of project participants.

For example, if a project provides training in new and improved farming practices, a transfer of skills and knowledge or human capital would be expected. While this knowledge is all well and good, it is the utilization of the knowledge that will ultimately result in real impact on the lives of the participating farmers. If applied, this knowledge transfer may translate into improved crop yields, resulting in improved household food security. It may also lead to improved household income from increased crop sales. Therefore, the knowledge and the improved yields attributable to this knowledge are effectively only **Proxy Indicators** of impact. If some of the extra food produced is consumed by the farmer and his family, this utilization represents a real food security and nutritional benefit, or livelihoods impact. Alternatively, if increased income derived from crop sales allows for livelihoods investments in health, education, food and food production, or income generation, these expenditures would represent a real impact on the lives of the project participants.

Impact indicators look at the end result of project activities on people’s lives. Ideally, they measure the fundamental assets, resources and feelings of people affected by the project. Therefore, impact indicators can include household measures of income and expenditure, food consumption, health, security, confidence and hope.

Most project M&E systems measure the process or delivery of inputs and activities as opposed to the real impact of the project on people’s livelihoods. Measuring process is no less important than

measuring impact; process monitoring data is a valuable step in determining how impact relates to a specific project activity. For example if a food security project introduces high yielding crop varieties into a community and an impact assessment shows an overall improvement in food security, the process monitoring reports should tell us whether the improved seed varieties were indeed delivered and planted.

In addition to measuring process indicators, some M&E systems do measure proxy indicators of impact such as livelihoods asset transfers. For example, knowledge transfers from a farmer training might be measured by testing the participants to see if they have learned the techniques that had been taught. Alternatively the project that introduced high yielding crop varieties might measure crop yields as a proxy for impact, assuming that increased production automatically translates into improved household food security. If the project was implemented in an insecure area, it is possible that the harvested crops never made it to the granary of the intended recipient, or that they were looted by militias shortly after the harvest. In some cases the transfer of project derived assets can and does actually put people at risk, resulting in a negative impact. Alternatively the farmer may have immediately sold his crops to pay taxes, loans, or debts, or to pay for school fees or medical expenses. In other words the food was not consumed in the household, and the project may not have provided the food security benefits anticipated under the project objectives. The project may well have had other impacts, possibly even more important than the food security benefits anticipated, but these would not be captured using the proxy indicator of improved yields. Although proxy indicators of impact can be useful and easy to quantify, they do not always provide an effective benchmark for measuring impact, as they do not go far enough in investigating the utilization of project asset transfers or the actual changes to people's lives brought about by these transfers.

Therefore, when identifying impact indicators it is useful to think about what livelihoods transfers are expected from the project in question. However, once you have identified these assets, it is useful to think about them in terms of utilization. In other words, how will the project participants use the knowledge, food, income and so on derived from the project, how will these assets help them, and what difference will this make to their lives?

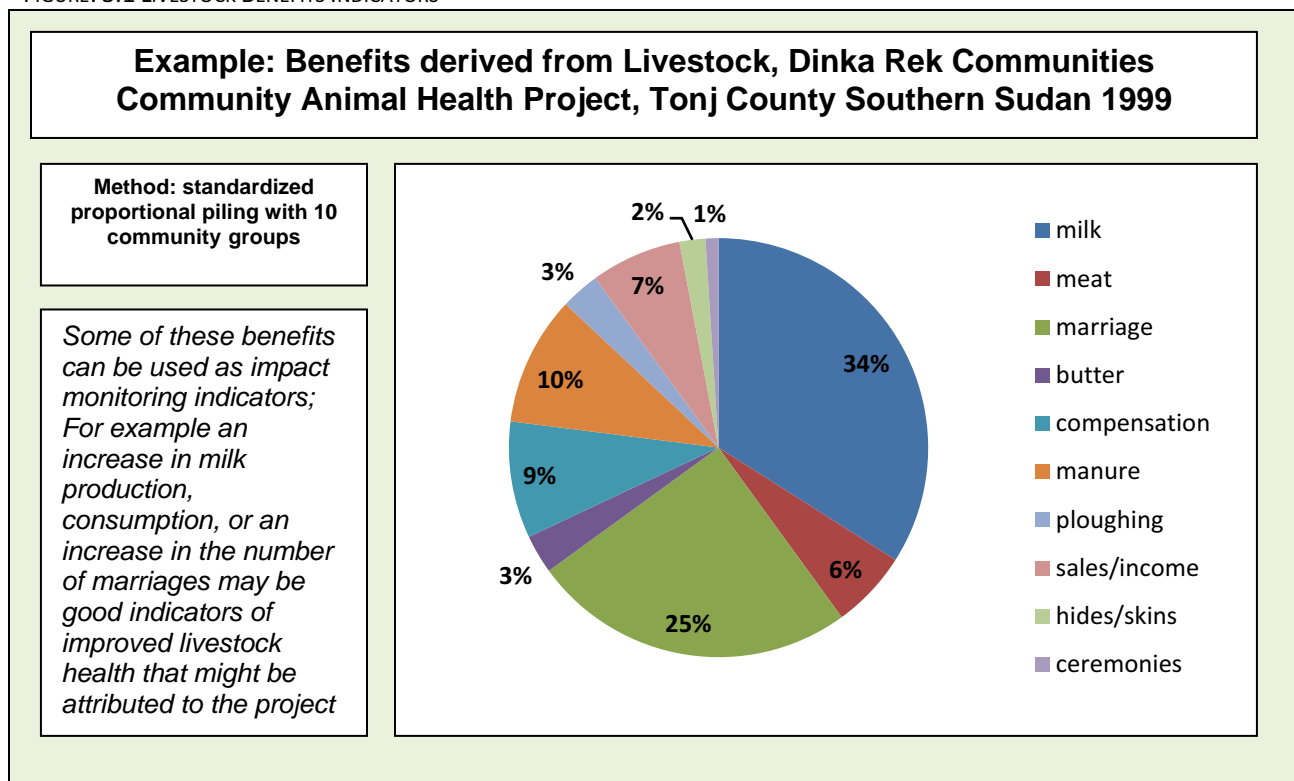
Community-defined indicators of project impact

As far as possible, a PIA should use impact indicators which are identified by the community or intended project participants. Communities have their own priorities for improving their lives, and their own ways of identifying impact indicators and measuring change. Oftentimes these priorities and indicators are different from those identified by external actors. Traditional M&E systems tend to over emphasize 'our indicators' not 'their indicators'. For example, selected drought response projects in Zimbabwe and Niger aimed to measure project impact against specific household food security indicators, such as increased crop production and dietary diversity. When project participants were asked to identify their own benchmarks of project impact, these included the following indicators.

- The ability to pay for school fees using project derived income (education benefits)
- The ability to make home improvements
- Improved skills and knowledge from the projects training activities
- Improved social cohesion
- Time saving benefits provided by the project

One way of collecting community indicators of impact is simply to ask project participants what changes in their lives they expect to occur as a direct result of the project. Alternatively, in cases where the project has already been implemented you can ask what changes have already occurred. This should be done separately for each project activity that you plan to assess. If the project has a technical focus, for example natural resource management, the provision of agricultural inputs or livestock, ask the participants how they benefit from the ownership or use of the resources in question. Alternatively if the project focuses on training or skill transfers, ask how the training or improved skills will benefit them. These benefits are impact indicators.

FIGURE: 3.1 LIVESTOCK BENEFITS INDICATORS



Source: Catley, 1999

One challenge that you may come across when collecting community indicators is that participants will assume you automatically know what livelihoods benefits will be derived from project activities or inputs. For example participants in a re-stocking intervention may tell you that they now have more goats as a result of the project. An increase in livestock would be a good community indicator of impact, however this alone doesn't tell you how the goats will benefit that person or their household. When collecting these kinds of indicators it is important to follow up with additional questions. It may be that the actual benefit derived from the goats is an increase in milk production which 'we feed to our children'. From this you can deduce that increased milk production, or increased household milk consumption are better indicators of impact than simply an increase in the number of livestock assets¹. These indicators can easily be represented

¹ If the impact assessment takes place before the desired project impact is expected, you may have no choice but to use proxy indicators such as an increase in the number of livestock. Although not ideal, at least if these have been identified by project participants, they can to some extent be validated as community indicators.

numerically. You can then go a step further and ask how milk is beneficial to their children, and the participant might mention the health and nutritional benefits that milk provides. Ultimately the best indicator of impact in this case may be an improvement in children’s health. Alternatively the participants may have received income from the sale of the goats or goat products. If this is the case you will want to ask how they used this extra income. Expenditures on food, education, clothes, medicine, ceremonies, and investments in livestock, agricultural inputs, or income generating activities are all good livelihoods indicators of impact that can be easily measured. Again, investigating how livestock, livestock products, and the income earned from these are utilized can be a useful way of unpacking and identifying livelihoods impact indicators.

Example: A restocking project where project participants receive sheep and goats:

How do you benefit from goats?

- “I feed the milk to our children”
- “I sell the offspring, we use the money for food”
- “I now have more status in the community”
- “I can now join the local saving and credit group”

These are all impact indicators

When identifying the impact indicators try to be specific not general. For example, “*The goats give me milk*” is not very specific. A better and more specific indicator is “*The children drink the goats milk*” or “*I use the income from selling milk to pay school fees*”. Similarly, the indicator “*I have more status in the community*” is not very specific. A better indicator might be “*I can now join the local savings and credit group in the village*”.

When collecting community indicators, it is important to capture the views of different groups of people within the community. Women will often have different priorities and expectations of project impact than men. The same might apply to different groups. For example Fulani pastoralists are likely to attach greater importance to the livestock health benefits from a project well than their Hausa neighbors in the same community, whose livelihoods practices focus on agricultural production.

Quantitative and Qualitative Indicators

Community impact indicators may be *quantitative*, such as income earned from crop sales, or *qualitative*, such as improved skills, knowledge or social status. People often believe that impact is difficult to capture because it is qualitative. However, any opinion, perception or feeling can be expressed numerically using participatory ranking or scoring methods. Having said this, it is important to apply these methods systematically and repetition improves reliability.

- **Examples of quantitative impact indicators:** (*increased milk consumption by children, income from crop sales*)
- **Examples of qualitative impact indicators:** (*trust confidence hope, status participation, security, dignity, social cohesion, wellbeing*)

If the community or participants produce many impact indicators, ask them to **prioritize the indicators using ranking**. It is important not to have too many indicators: as with the key assessment questions, it is better to have a few good indicators than too many poor ones. Try to limit the number of indicators therefore to no more than five per project activity being assessed.

Changes in coping strategies

Often times during a humanitarian crisis, people will employ a variety of economic or livelihoods strategies to cope with the effects of a particular shock such as a drought. These strategies, sometimes called **coping mechanisms** are often good indicators by which to measure change or impact. For example during a drought people may sell most of their livestock (usually at a reduced price) in order to purchase food and cover other priority expenses. Once the situation has improved and people move into a recovery period, they will often restock by re-investing in livestock assets. By capturing these changes you can determine whether the situation has improved and to what extent the project played a role in facilitating this change. To identify these coping strategies, simply ask people what they did during the period leading up to and during the crisis.

Table 3.1 Examples of Common Coping Strategies

Coping Mechanisms	
1	De- stocking to save remaining livestock and purchase grain (<i>early stages of drought</i>)
2	Stress sale of livestock at reduced prices in order to purchase grain (<i>later stages of drought</i>)
3	Sale of household assets (including roofing, doors, windows, and cooking utensils) in order to purchase grain.
4	Migrate to other areas in search of better pasture for livestock
5	Increase vegetable production for consumption and sale
6	Migration of young men to urban areas as well as to other countries in search of employment
7	Expand on informal income generating activities such as mat weaving, brick making, firewood collection
8	Increase production/collection and consumption of wild foods
9	Reduce the number of meals consumed (even down to one meal a day)
10	Engage in agricultural work in neighboring communities less affected by the drought, or for wealthier farmers
11	Participate in food-for-work projects or public safety net program
12	Permanently migrate to urban areas and give up agro-pastoralist livelihoods practices

For most livelihoods projects, community indicators of project impact will often relate to changes or improvements in income, food security, health and education. Impact against these indicators as well as changes in coping strategies can often be broadly captured by looking at changes in income and food sources, as well as household expenditure. For example, using the strategies from the table above; in comparison to a normal year, after a poor cereal harvest, one might expect a greater portion of household food to come from wild foods (strategy #8) relative to cereals. One might also expect a greater portion of income to come from the sale of household assets (strategy # 3) relative to other income sources during this period. In terms of household expenditure, after a poor harvest you might expect a greater proportion of household income to be spent on food to compensate for the decline in farm production. During a ‘recovery’ period following a drought,

one might expect households to spend more of their income on livestock assets, as they re-stock after suffering livestock losses due to death or stress sales. Therefore tracking changes in food, income and expenditure can often be a useful way of measuring impact against community indicators of impact and against coping strategies. Many livelihoods projects also have food security, income generating, or livelihoods diversification objectives and again food, income and expenditure changes can be a useful way to measure change against these objectives.

It needs to be emphasized that an understanding of the context is essential to deriving meaning from these indicators, as livelihoods and coping strategies will vary depending on the kind of crisis being experienced. They will also change over time and between different communities. Simply measuring changes in livelihoods impact indicators will not tell you much about impact unless you understand the reasons behind those changes. An understanding of livelihoods and context is therefore an important part of any impact assessment.

STAGE FOUR: METHODS

This section provides both real life and hypothetical examples of how different methods have been or might be used to measure project impact on livelihoods. The exact tools used in these examples may or may not be transferable to other projects or assessments. However, they should provide an overview of how participatory tools can be adapted and applied in different contexts to measure the impact of different types of projects. For additional resource materials on participatory tools and methods see Annex 1.

Once you have identified your impact indicators, you will need to decide which methods should be used to measure changes in these indicators. Some useful methods which can be used to measure impact or change numerically include, *simple ranking and scoring*, *“before” and “after” scoring*, *pair-wise ranking and matrix scoring*, *impact calendars*, *radar diagrams*, and *proportional piling*. All these methods involve the use of semi-structured interviews as part of the method. Each method has its strengths and weaknesses, and some methods are more appropriate for certain cultures and contexts. It is important to field test your methods with community members before the assessment.



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Ranking and scoring methods

Ranking and scoring methods require informants to assess the relative importance of different items. Ranking usually involves placing items in order of importance (1st, 2nd, 3rd etc.) whereas scoring methods assign a value or a score to a specific item. This is usually done by using counters such as seeds or stones, nuts or beans to attribute a specific score to each item or indicator. Proportional piling and scoring techniques can be used to assess the relationship between two or more given variables; these may include indicators of project impact. For proportional piling informants are asked to distribute one hundred counters amongst the different variables or indicators, with the largest number of counters being assigned to the most important indicator, and the smallest number of counters being assigned to the least important indicator.

FIGURE 4.1: WORKSHOP EVALUATION SCORING SHEET

The table on the right is a photograph of an evaluation form filled out by a participant at an impact assessment training workshop. It provides an example of how a simple scoring exercise was used to assess the effectiveness of the training against the workshop objectives and other indicators identified by participants and facilitators during the workshop. Participants were asked to assign a score to each indicator on a scale of 1-5, with five being the most important, and one being the least.

Impact assessment scoring methods essentially follow the same principles applied in this example.

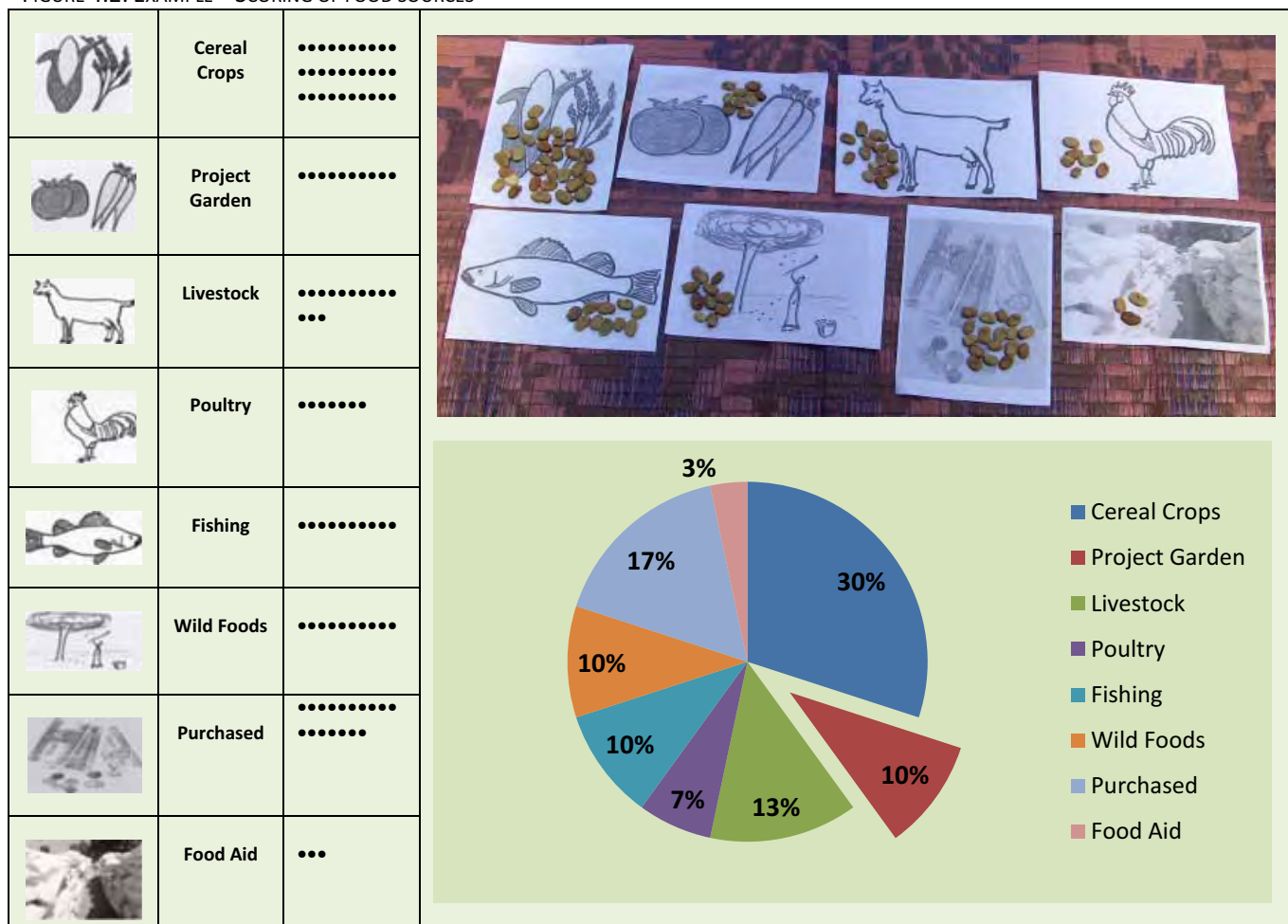
Please rate the following on a scale of 1-5, with 1 being the lowest (worst) and 5 the highest (best).

	1.	2.	3.	4.	5.
Did you come to the workshop with a clear understanding of the workshop's objectives?				✓	
From your perspective, Did the workshop attain its objectives:					
<i>Objective 1: Review experiences of 7 projects</i>					✓
<i>Objective 2: Reach a common understanding of PIA</i>				✓	
<i>Objective 3: Design a PIA for your project</i>			✓		
Has your understanding of the gates Impact program process improved as a result of the workshop?					✓
Did you understand PIA before you came to the workshop? (1=not at all; 5=completely)		✓			
Did/does your agency use PIA in your current project? (1=never; 5=exclusively)	✓				
Did your understanding of PIA methods change over the course of the workshop?				✓	
Do you feel ready (at the end of the workshop) to conduct a PIA for your project? (1=not at all; 5=completely)				✓	
How would you rank PIA as an impact evaluation approach? (1=not at all useful; 5=more useful than other approaches)				✓	

Please add your thoughts or comments on the workshop: How could the next workshop be improved? (Write comments and answers on the back!)

If a food security project were to establish a community nutrition garden, you may want to measure the impact of the project garden on household food security using a simple scoring exercise. This could be done by asking project participants to identify all the food sources that contribute to the household food basket. Using visual aids to represent each of the different food sources, you would then ask the participants to distribute the counters amongst the different variables to illustrate the relative proportion of household food derived from each food source.

FIGURE 4.2: EXAMPLE – SCORING OF FOOD SOURCES



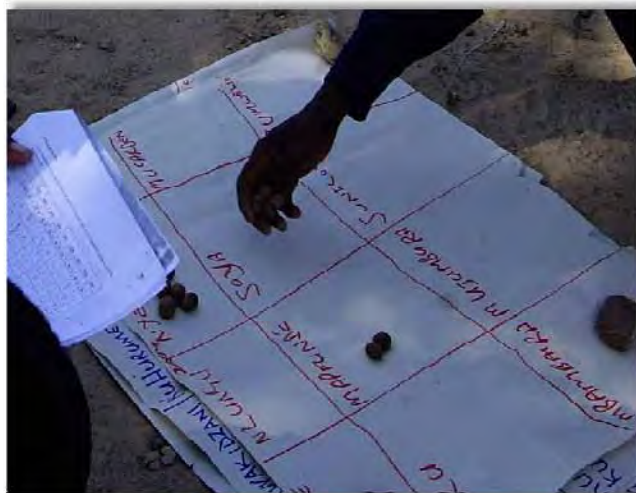
The results from this simple hypothetical example indicate that ten percent of household food comes from the community garden (figure 4.2). Assuming that this particular food source (community garden) was introduced by the project it represents a new food source and the ten percent contribution to the food basket represents an impact on household food security that can be directly attributed to the project.

Note - although using a hundred counters makes it easier to automatically assign a percentage score to the results of scoring exercises, it is not essential that you use this many, and often it is quicker to use fewer counters when carrying out repetitive scoring exercises. As a general rule, if you are comparing many indicators, you will need more counters, if you are only comparing two variables, ten counters may be sufficient.

The use of visual aids and indicator cards in PIA



Where several different indicators are being compared it is useful to use visual aids, such as the picture cards illustrated in these photos. Alternatively local materials can be used to represent each indicator. For example a head of sorghum might represent rain-fed production, a broad green leaf might represent vegetable production, and a feather might be used to represent poultry production. Where informants are literate you may choose to simply write the name of the indicator on a card. The use of these aids helps to avoid piles of counters being assigned to the wrong indicator. Where indicators have already been identified prior to the assessment, it is useful to pre-prepare indicator cards before-hand, particularly when using picture cards. It is also important to use strong pieces of card that will not get damaged in the field.



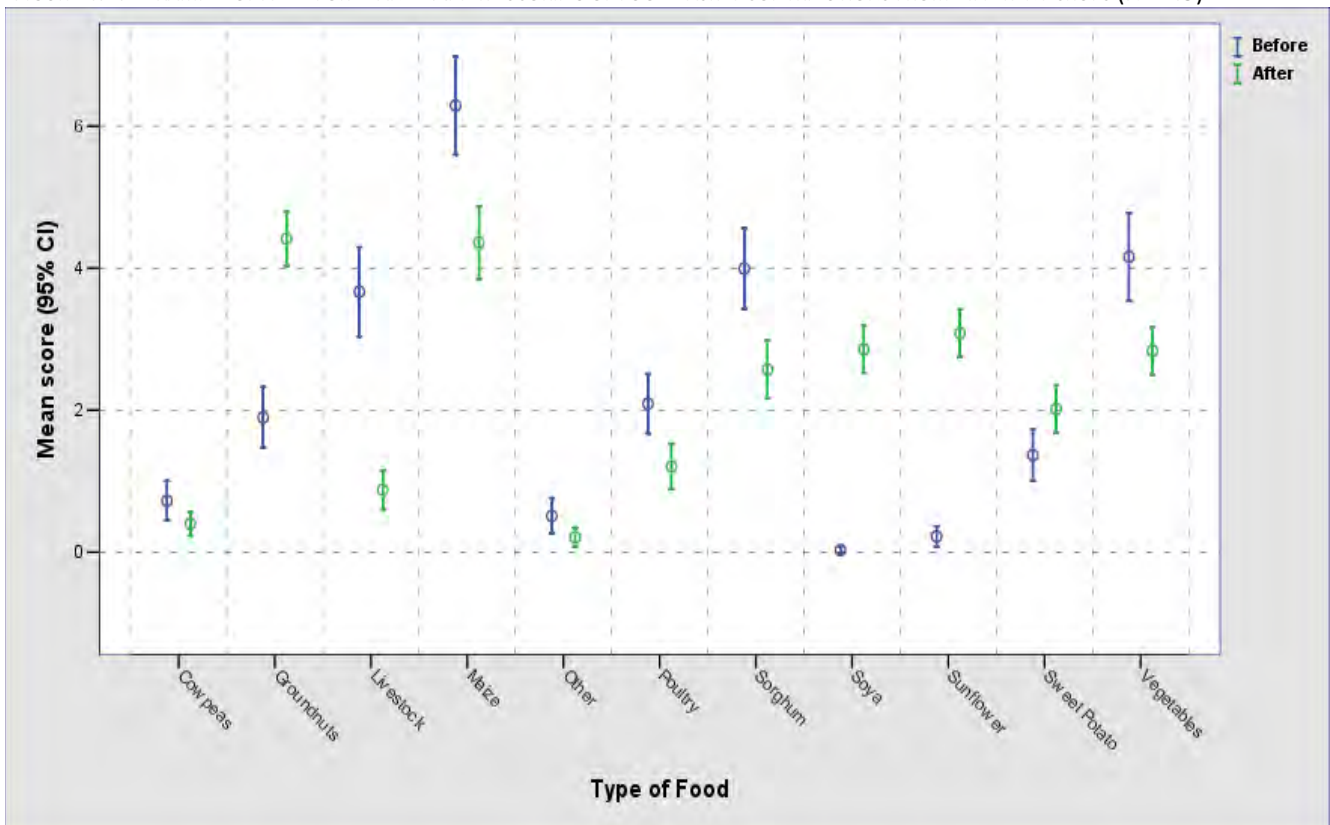
However, it is also possible that a reduction in food aid may have been due to supply issues, and the reduction in rain-fed crops and wild foods may have been the result of inadequate rainfall and a poor harvest. In this case production from the project garden may have helped people to cope with the bad harvest, and project impact would be framed more in terms of improving people’s resiliency to food shocks, rather than an improvement in food security. Consistent with this, the results do not show an overall increase in food, or even an improvement in food security, only the relative change in the contributions of the different food sources.

The increase in the food contribution from poultry production may be due to the fact that the respondent was able to invest in hens using income from the sale of crops produced in the project garden. This livelihoods investment would represent a project impact, and the increase in the contribution from this source is a useful indicator of this impact.

Alternatively, the income to invest in poultry may be attributed to project-related savings as opposed to direct project-derived income. It is possible that before the project, people would have to purchase some of the food they now produce in the project garden. This saving may account for the results showing a relative reduction in the amount of household food now being purchased.

While all or none of these interpretations may be true, there is no way of knowing unless you ask the informants to explain the changes observed. Although participatory scoring methods are a useful way of collecting numerical data on project impact, on their own, the numbers produced from these exercises can be fairly meaningless without the reasoning to explain them. Therefore, it is essential that these exercises are conducted as part of a semi structured interview process, and not done in isolation.

FIGURE 4.2.2 EXAMPLE OF A “BEFORE” AND “AFTER” SCORING OF FOOD BASKET CONTRIBUTIONS FROM DIFFERENT CROPS (N=145)



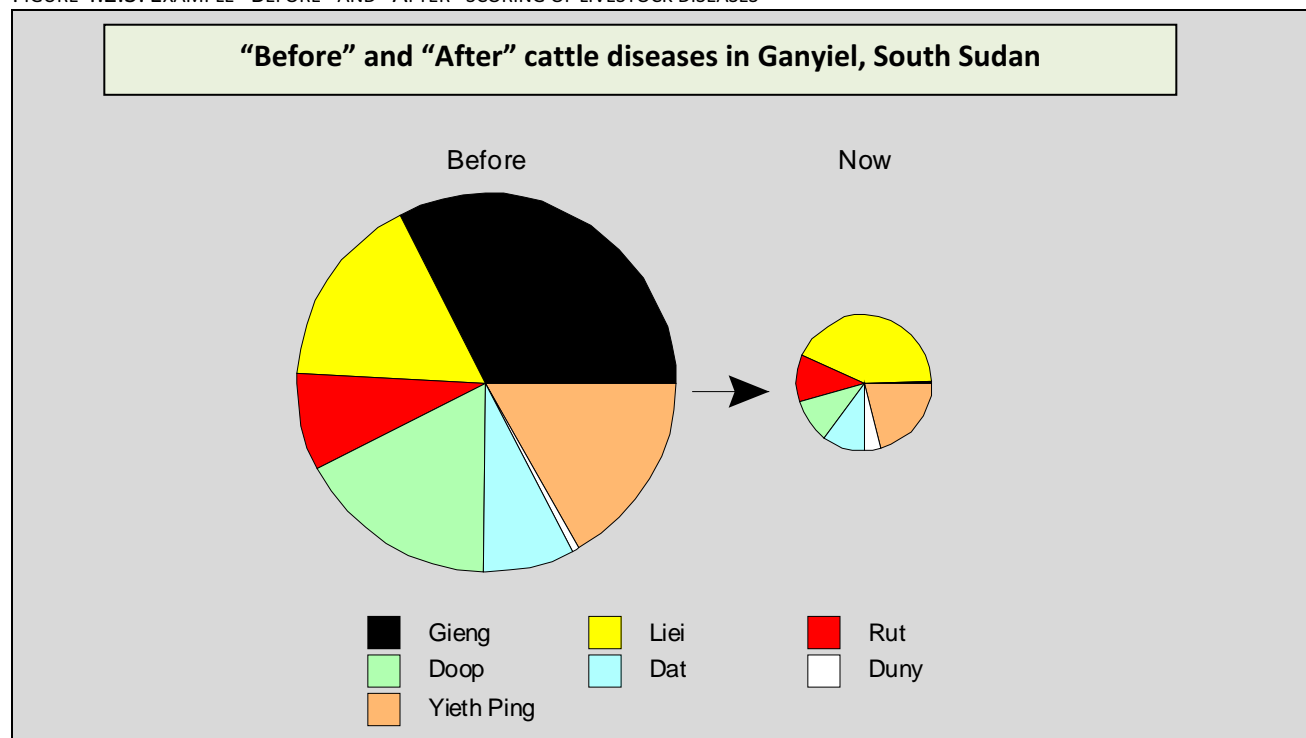
Source: Burns and Suji 2007

The scoring exercises in the previous examples essentially measure relative as opposed to actual changes in the indicators being assessed. For example, if the contribution to household income from one income source were to increase over a period of time, this increase is only relative to contributions

from the other income sources. For example, a farmer in Zimbabwe earns a hundred percent of his income from selling cotton and in a typical year can expect to earn the equivalent of \$ US 900 from cotton sales. However, a fairly sudden decrease in the domestic and international demand for cotton brings down the price, and this year the farmer can only expect to earn the equivalent of \$ US 500 from cotton sales. During the same period, an international NGO started implementing a project in the area promoting crops such as soya and sweet potato with the objective of promoting household food security. The cotton farmer had participated in the training, and had received seeds and planting materials and had managed to produce a surplus which he sold locally for the equivalent of \$ US 400. While the percentage of his income earned from other sources (soya and sweet potatoes) went from zero to almost forty five percent, and the percentage income earned from cotton almost halved, his actual income remained the same at \$ US 900. Similarly if cotton prices had remained stable, and he had participated in the project and had earned \$ US 900 from cotton sales and \$ US 400 from soya and sweet potato sales, a scoring exercise would roughly show a thirty percent reduction in the contribution of cotton to his overall income. This does not represent a thirty percent reduction in income earned from cotton, as his overall income actually increased by forty five percent. These types of “before” and “after” scoring exercises therefore only show the relationship between different variables, and impact is measured in terms of the relative changes in the importance of these indicators in relationship to each other, not quantified in exact metric or monetary units.

Having said this, it is possible to estimate an actual (comparative) percentage increase or decrease against certain indicators using participatory scoring tools. The following example shows how “before” and “after” proportional piling was used to measure changes in cattle disease during a community based animal health project in South Sudan. Proportional piling was done with 6 groups of informants and the results were compiled. The “before” project situation was described first by dividing 100 stones according to the main cattle diseases at the time. The informants were then asked to increase or decrease or leave the hundred stones according to the “after” project situation. The areas of the two pie charts are proportional.

FIGURE 4.2.3: EXAMPLE “BEFORE” AND “AFTER” SCORING OF LIVESTOCK DISEASES

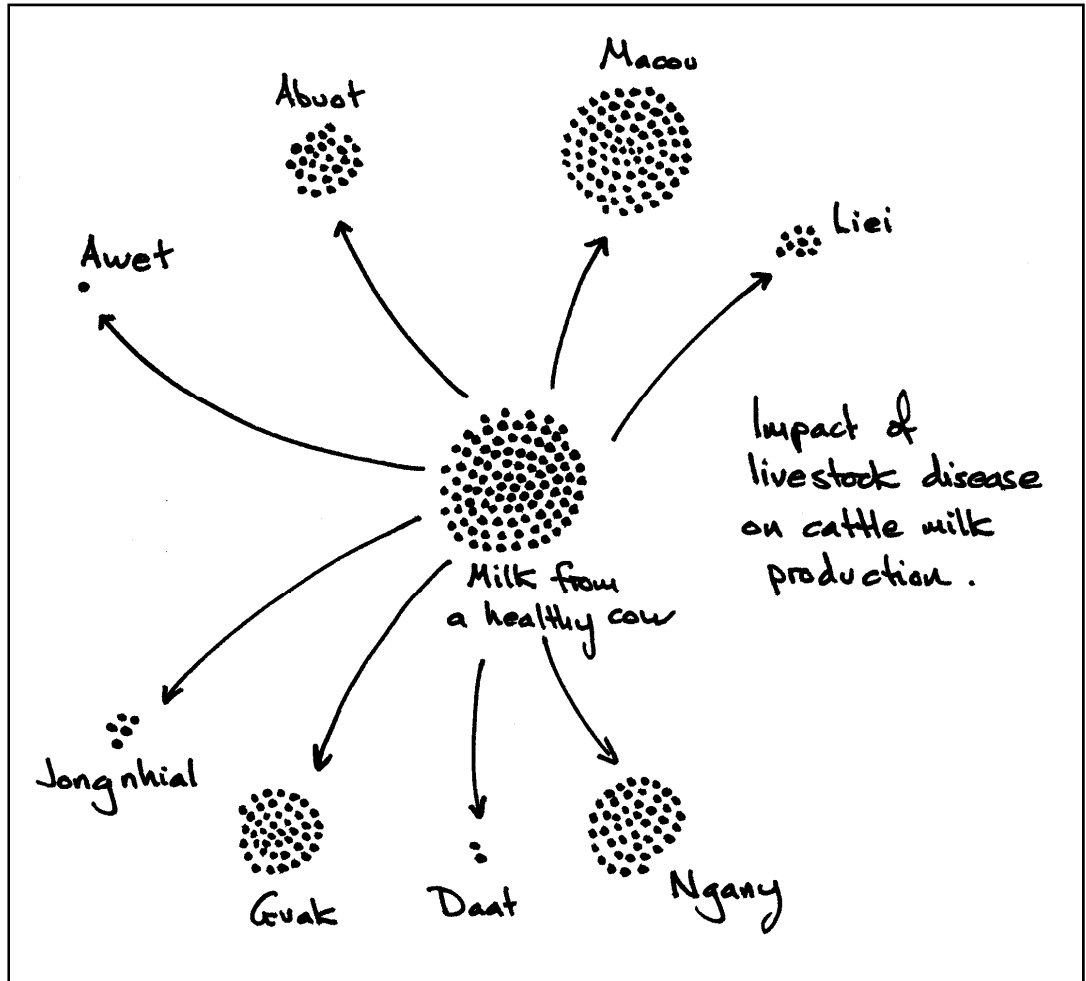


Source: Catley 1999

FIGURE 4.2.4 IMPACT SCORING OF MILK PRODUCTION

This example illustrates how proportional piling was used to compare milk production in healthy cattle as opposed to those suffering from different types of cattle disease. The black dots represent the piles of counters.

A hundred counters (in the center of the diagram) were used to represent milk production from healthy cattle. The smaller piles on the periphery represent milk production in infected livestock.



Awet - Rinderpest
Daat - Foot and mouth disease and foot rot
Guak - Probably fascioliasis
Joknhial - Anthrax
Abuat - Contagious bovine pleuropneumonia
Ngany - Internal parasites
Liei - Disease characterized by weight loss, includes trypanosomiasis & fascioliasis
Makieu - unknown; affected animal behaves abnormally and cries

Source: Catley 1999

Scoring against a nominal baseline

Another way of capturing actual (comparative) as opposed to just relative change is by using a nominal baseline to represent a quantity of a given indicator at a certain point in time. The following example describes how this method was used to assess changes in income during an impact assessment of a project which was designed to achieve household income benefits.

Table 4.1 Measuring impact against a nominal baseline

Example:

Project participants were asked to show if there had been any increase or decrease in actual income since the project started. This was done by placing ten counters in one basket which represented their income before the project. The participants were then given another ten counters and asked to show any relative changes in household income, by either adding counters to the original basket of ten, or removing them. For example if someone were to add four counters to the original basket this would represent a forty percent increase in income. Alternatively if they were to remove four counters it would represent a forty percent decrease in income. The participants were then asked to account for these changes. The table below shows the aggregated results indicating between 15% to 16% average increase in income in the two project communities.

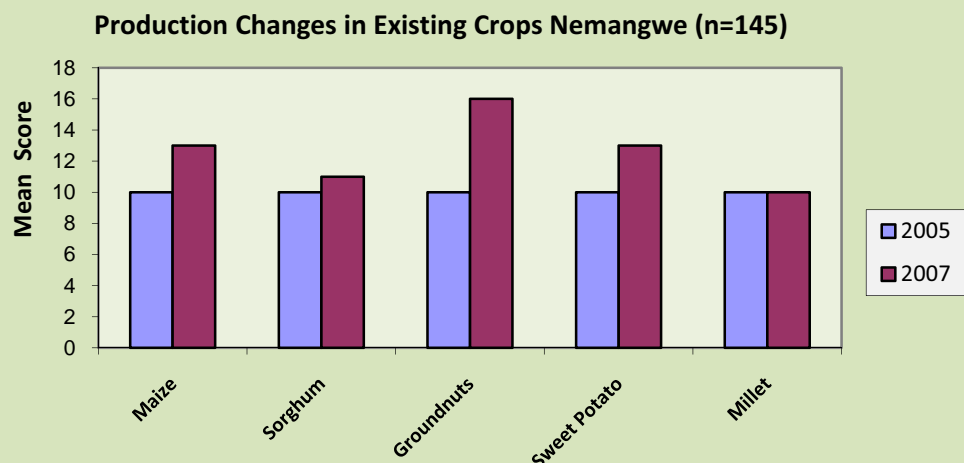
Location	Variable	Mean Score (increase) 95% CI
Njelele (n=117)	Changes in HH Income	16.3 (15.9, 16.8)
Nemangwe (n=145)	Changes in HH Income	15 (14.3, 15.7)

Data derived by scoring a total of 20 counters against a given baseline of 10 counters. (Source, Burns and Suji, 2007)

Scoring against a nominal baseline can be useful in estimating changes in certain indicators such as income, livestock numbers, and crop yields. In many cases, people will be unwilling to reveal certain types of information, and this method does not require exact income, or herd sizes to be quantified. Therefore, sensitive questions like ‘how much money did you make’, or ‘how many cattle do you own’ are not necessary.

FIGURE 4.2.5: SCORING CHANGES IN CROP YIELDS AGAINST A NOMINAL BASELINE

The chart shows the results from an exercise that estimated changes in crop yields against a nominal baseline. The project had been promoting production of groundnuts, sweet potatoes, and drought resistant varieties of maize.



Data derived by scoring with 20 counters against a nominal baseline of 10 counters. (Source, Burns and Suji, 2007)

Simple Ranking

As the term implies, simple ranking involves asking participants to categorize or grade items in order of importance. This can be a useful way of prioritizing the impact indicators you wish to use in an assessment, or to get an understanding of which project benefits or activities are perceived to be of greatest importance to the community members.

Table 4.2: Overall project benefits by focus group participants

Benefit	Ranking in order of Importance (n=16)
Better farming skills	1 st
More food (fewer hunger months)	2 nd
Increased variety of food/dietary diversity (improved nutrition)	3 rd
Improved health	4 th
Increased income from sale of food	5 th

Data derived using the summary of ranks from 16 focus group discussions. The original data was collected using simple ranking (Source, Burns and Suji, 2007)

Table 4.3 Ranking of livestock assets

Ranking of Community Livestock Assets			
Women		Men	
Cattle	1 st	Cattle	1 st
Sheep	2 nd	Goats	2 nd
Goats	3 rd	Sheep	3 rd
Camels	4 th	Camels	4 th
Donkeys	5 th	Donkeys	5 th
Horses	6 th	Horses	6 th

In this example pastoralists were asked what benefits they derived from different livestock. They were then asked to rank them in terms of the overall benefits they provided. The exercise was done with both women and men's groups to ensure that any gendered differences were captured. In this example the only variation was that women ranked sheep higher than goats as they fetched a higher market price. The men valued goats slightly higher than sheep as they are more resilient to drought.

(Source: Burns, 2006)

It is also possible to prioritize indicators by getting people to vote using a ballot scoring exercise. For an impact assessment of a food security project in Zimbabwe, indicators were prioritized by asking participants to vote using a secret ballot. After a discussion about all the potential impact indicators that applied to the project, participants then wrote down what they perceived to be the single most important indicator of project impact. These were then collected and tallied and disaggregated by gender. Needless to say this method would need to be adapted in non-literate communities.

It is possible that other voting methods could be applied to impact measurement. In many ways project impact assessment is no different from a consumer survey or a polling exercise. Simple voting exercises include getting people to stand in lines or groups representing different indicators, or getting them to raise their hands in response to a specific question comparing two variables. These kinds of exercises lend themselves to focus group discussions. However, public voting can be problematic, as peer pressure may influence the vote, or the views of minority groups or less powerful individuals in the community may not come through. Nevertheless there is scope for experimentation with these kinds of exercises, particularly where the objective is to capture a quick vote on a non-sensitive issue.

Pair-wise Ranking and Matrix Scoring

Matrix scoring is a useful method in PIA. Primarily it is used to identify and prioritize impact indicators, and as a method for attributing impact to a project or a given project activity. Matrix ranking or scoring is essentially used to compare several items against a set of different indicators. Matrix scoring involves three main stages – a pair-wise comparison followed by the scoring of items, and finally ‘interviewing the matrix’.

Example of a ranking and matrix scoring of food source preferences

The following example describes how a pair-wise ranking and matrix scoring exercise was used to assess food source preferences during an assessment visit to an integrated livelihoods project in Niger. The project had several components -these included re-stocking of small ruminants and the establishment of cereal banks, and vegetable gardens.

During a focus group discussion participants identified their existing food sources as follows:

- Own farm production (millet)**
- Vegetable production**
- Purchased food (excluding cereal bank)**
- Livestock production (milk and meat)**
- Cereal bank (millet) purchases**



They were asked to individually compare or rank each food source against each of the other food sources in terms of overall preference. The participants were asked to give reasons for their preferences. The name of the food source that ranked highest was then entered into the appropriate cell in the pair-wise matrix (Table 4.4)

Table 4.4 Pair-wise ranking showing food source preferences

Food Source	Millet	Vegetables	Purchases	Cereal Bank	Livestock
Millet (own production)		Millet	Millet	Millet	Millet
Vegetables (own production)			Vegetables	Vegetables	Vegetables
Purchases				Cereal Bank	Purchases
Cereal Bank					Cereal Bank
Livestock					

Data collected from a pair wise ranking exercise with focus group participants during a field testing visit (Source: Burns, 2007)

An overall preference score is then calculated by counting the number of times each food source was ranked highest and thus recorded in the matrix:

- Score:**
- Rain-fed cereal production:** 4
 - Vegetable production:** 3
 - Cereal Banks:** 2
 - Purchase:** 1
 - Livestock:** 0

However, the objective of this exercise was not just to assign a rank or score to each of the food sources, but to identify indicators against which the food source could be scored against. These indicators were largely derived from the following reasons that were given for assigning a higher rank or preference to one food source over another:

Table 4.5 Reasons given for food source preferences

1	Millet vs. Vegetables	We prefer millet, as vegetables require a lot of water, which is hard to come by in this area, making vegetables difficult to grow.
2	Millet vs. Purchase	Millet is easier to come by, in that we can grow it and it is cheaper as we don't have to pay for it.
3	Millet vs. Cereal bank	We don't pay for the millet we grow; therefore it's cheaper than the cereal bank millet.
4	Millet vs. Milk	It's easier to sell millet than milk
5	Vegetables vs. Purchase	If we get a good harvest we can earn good income from selling the vegetables.
6	Vegetables vs. Cereal banks	Vegetables are cheaper
7	Vegetables vs. Milk:	Vegetables are easier to sell than milk, and are therefore better at generating income for the poor.
8	Cereal bank vs. Purchase	Cereal banks are cheapest

(Source, Burns 2007)

From these discussions it transpired that the overall preference for millet from own production was largely attributed to the volume or quantity of food that is produced from this source. The assessment team also asked participants what sources provided the most nutritious or healthy foods as opposed to just the largest quantities.

Based on the discussion during and after the exercise, the assessors and participants agreed on four broad categories of food preference indicators:

1. **Availability** (*quantity/volume*)
2. **Accessibility** (*easy to come by/grow/cheap*)
2. **Income earning or savings potential.**
4. **Nutritional /health value**

Participants were then asked to score the five food sources against each of the four food preference indicators identified. This was done using visual aids to represent each food source. A millet stem was used to represent rain-fed millet production, a broad green leaf was used to represent vegetable production, a handful of coins was used to represent food purchases (*excluding cereal bank purchases*), a bottle top was used to represent livestock production (*milk and meat*), and a small bag of groundnuts was used to represent cereal bank purchases. After carefully explaining what each visual aid symbolized, the assessors asked the participants to score each of the food sources against the first food preference indicator using fifty counters. The exercise was then repeated for each of the other three food preference indicators. The physical distribution of counters was done by one volunteer, but this was based on group consensus.



Table 4.6 Matrix scoring of different food sources against indicators of preference

	Millet	Vegetables	Purchases	Cereal Bank	Livestock
Availability (Quantity/Volume)	15	12	5	13	5
Access (Easy to come by)	22	8	3	13	4
Income earning and savings potential	12	13	0	8	17
Nutritional Value	6	17	6	6	15
Total	55	50	14	40	41

Data derived from a matrix scoring exercise using 50 counters, collected during focus group discussions (Source: Burns, 2007)

Note - Although livestock ranked lowest on the food source preferences during the pair-wise ranking exercise, against specific indicators such as income potential and nutritional value, it ranks much higher than some of the other food sources. Against the four indicator categories shown here, livestock comes out with the third highest overall score, illustrating how matrix scoring can be a valuable tool to measure against different indicators, and capture important information that otherwise may be overlooked.

Impact Calendars and Radar Diagrams

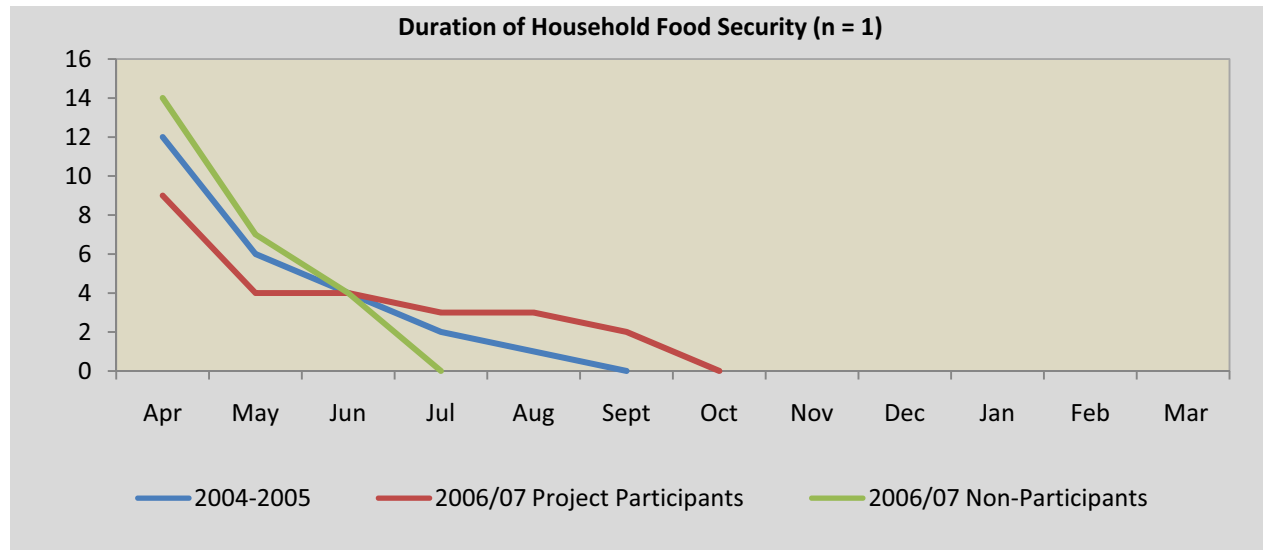
Impact calendars and radar diagrams can be useful in measuring impact against dimensional indicators such as time and distance. The following illustrations show an example of a tool that was used to measure the number of months of household food security “before” and “after” a project. Project participants were given twenty five counters representing a households’ post harvest food balance. Using twelve cards representing each month of the year, participants were asked to distribute the counters along a twelve month calendar to show the monthly household utilization of the harvested maize up until depletion. This exercise was done with project participants for the agricultural year before the project started, and again for the agricultural year after the project had started. The exercise was then repeated with community members who had not participated in the project.



Table 4.7 Food security impact calendar example using 25 counters (1 repetition)

	April	May	June	July	Aug	Sept	Oct	Nov	Dec	Jan	Feb	Mar
2004-2005	●●●●●●●●	●●●●●	●●●	●●	●							
2006-2007 actual	●●●●●●●	●●●	●●●	●●	●●	●●						
2006-2007 (Control)	●●●●●●●●	●●●●●	●●●									

FIGURE 4.3 CHANGES IN THE NUMBER OF MONTHS OF FOOD SECURITY

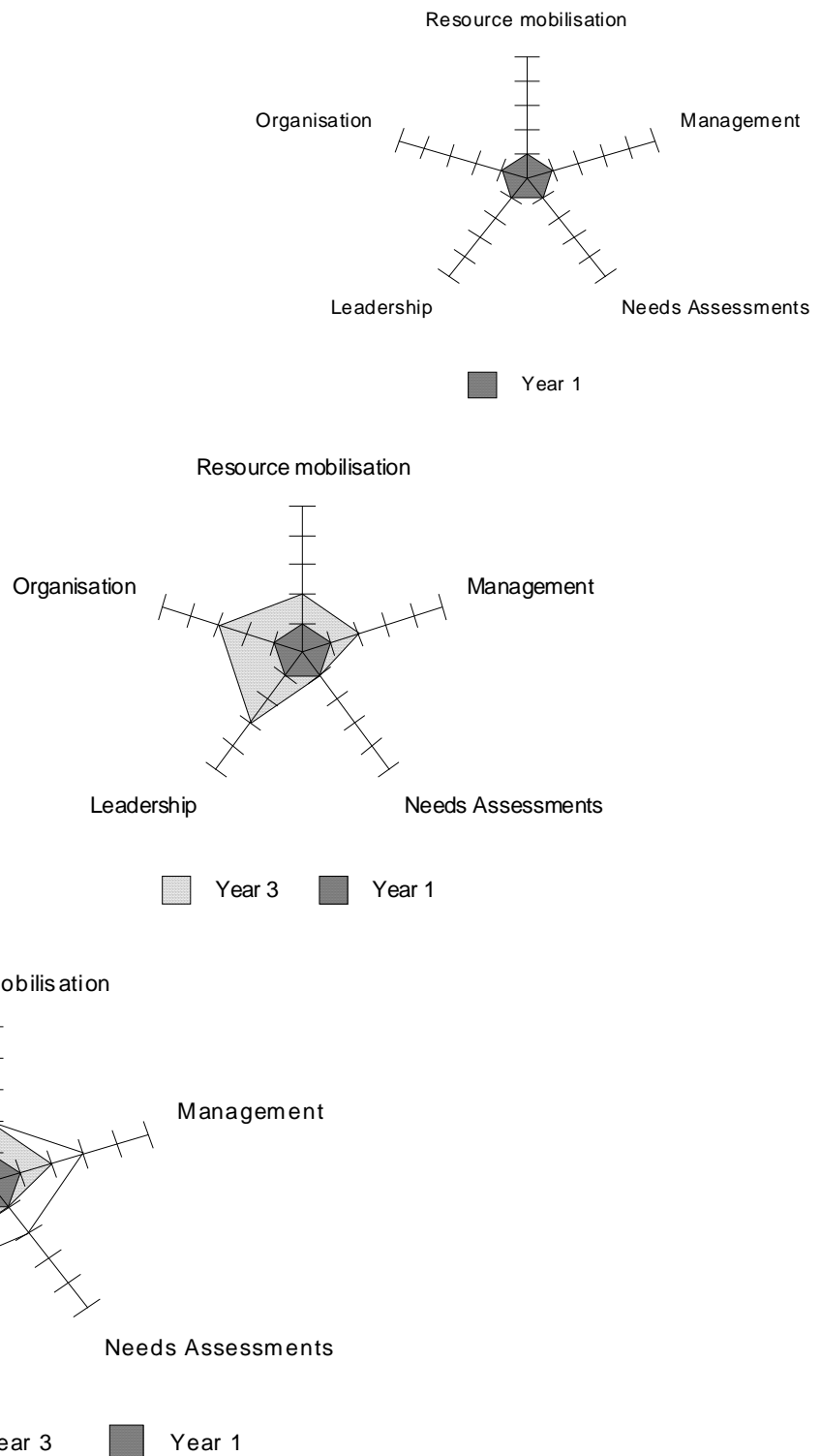


Measuring Participation

FIGURE 4.4 PARTICIPATION RADAR DIAGRAMS

This example from twenty years ago shows how radar diagrams were used to measure levels of community participation in a primary healthcare project. This is a good illustration of how a qualitative indicator such as participation can easily be measured.

In this example levels of participation are measured against five components of the project cycle. This would be done by asking participants to gauge their own level of participation in each of the activities identified on a scale of 0-5 each level being represented by the spokes on the radar diagram. - The results show increasing levels of participation over time.

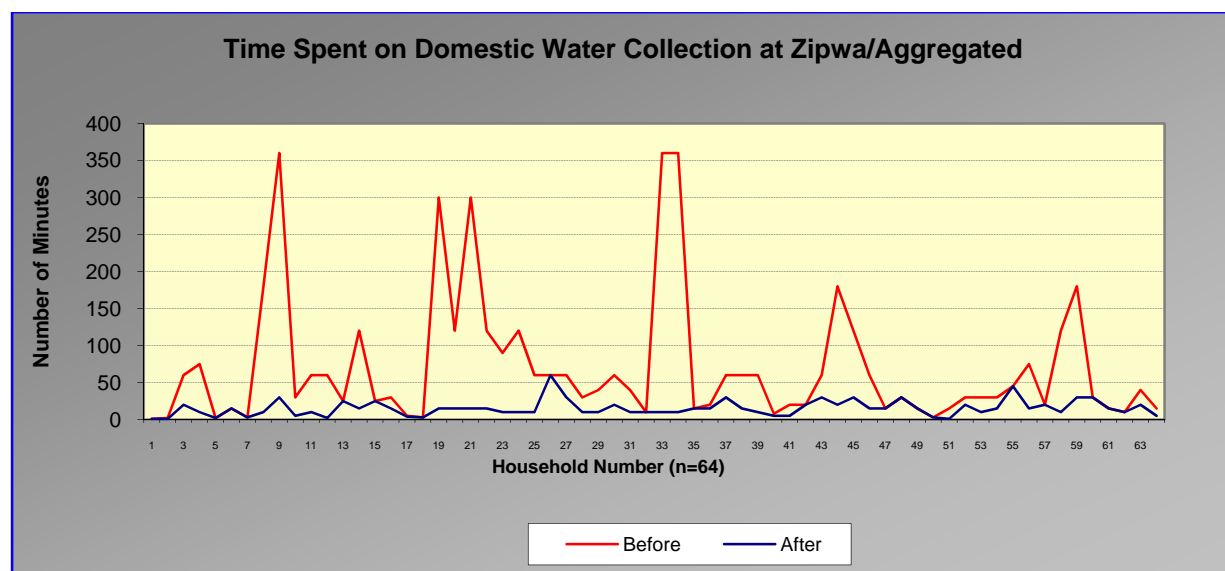
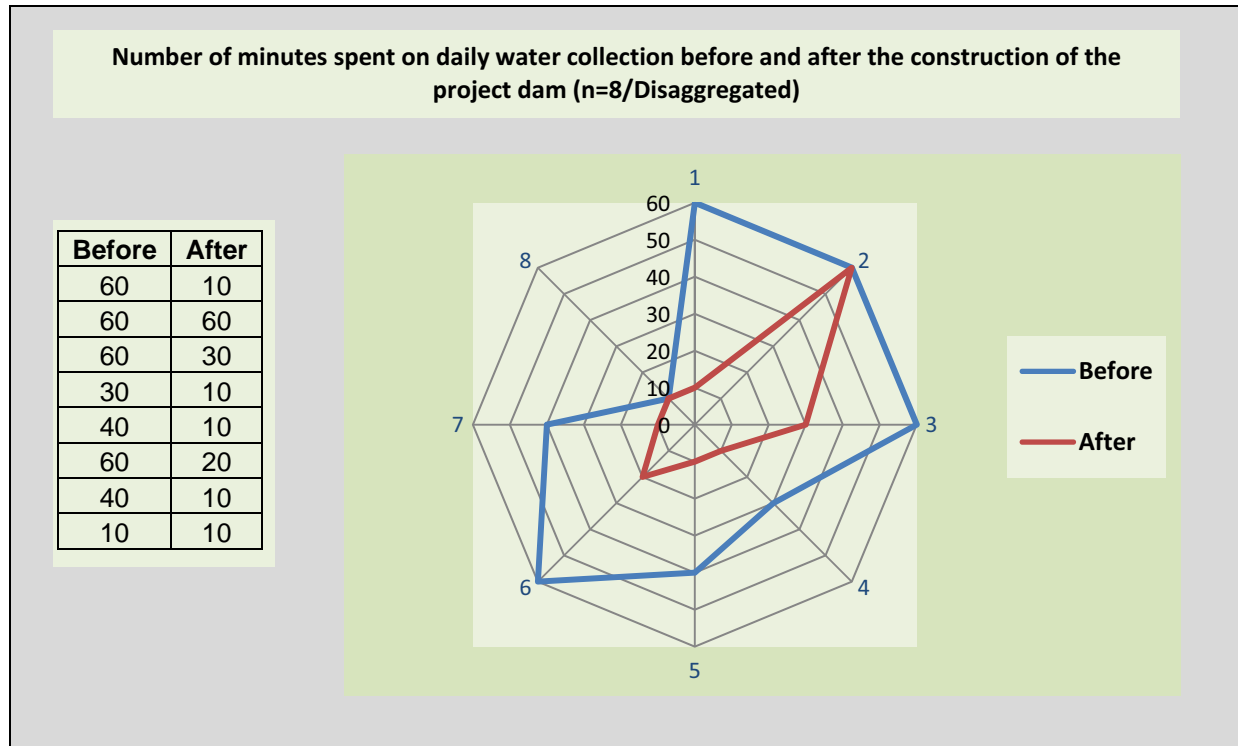


Source: Rifkin, S. B., Muller, F. and Bichmann, W. (1988). Primary healthcare: on measuring participation. *Social Science and medicine* 26 (9), 931-940

Time Savings Benefits

Time saved as a result of a project, or project activity is often cited as a key community impact indicator or project benefit. In the following example from a dam rehabilitation project, participants suggested that the time saved on domestic water collection was an important project benefit. Using the same concept as “before” and “after” scoring but without the counters, and using minutes as a standard unit of measurement, project participants were simply asked how much time they spent each day collecting water before the construction of the dam, and how much time they spent on this activity now. The responses were recorded, and the radar diagram below (figure 4.5) provides a visual illustration of the results from eight respondents.

FIGURE 4.5 MEASURING TIME SAVING BENEFITS

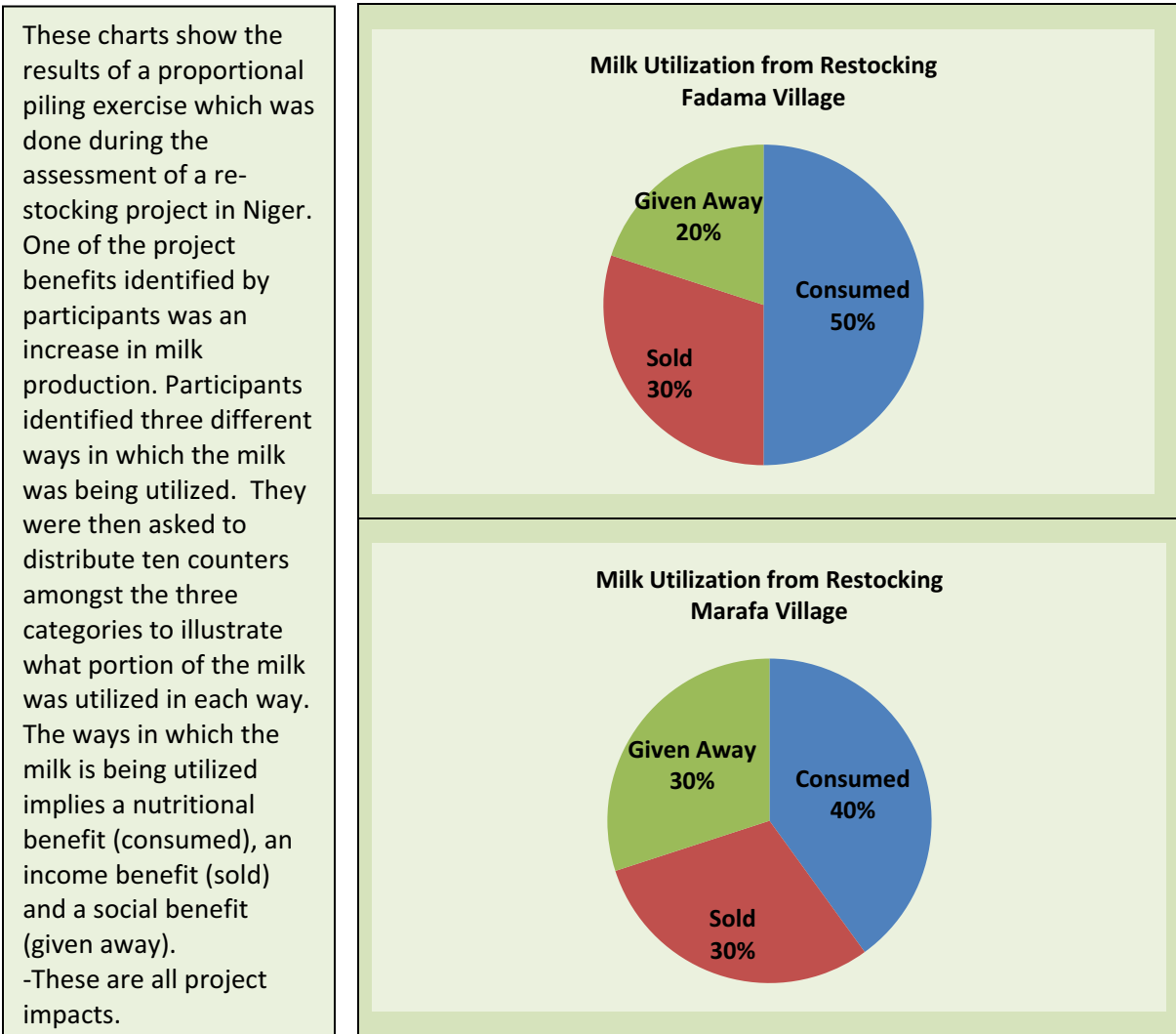


Source: Burns and Suji 2007

Assessing Utilization and Expenditure

The utilization of project asset transfers can often tell us a great deal about project benefits and looking at utilization can be a good way of measuring impact for a variety of interventions.

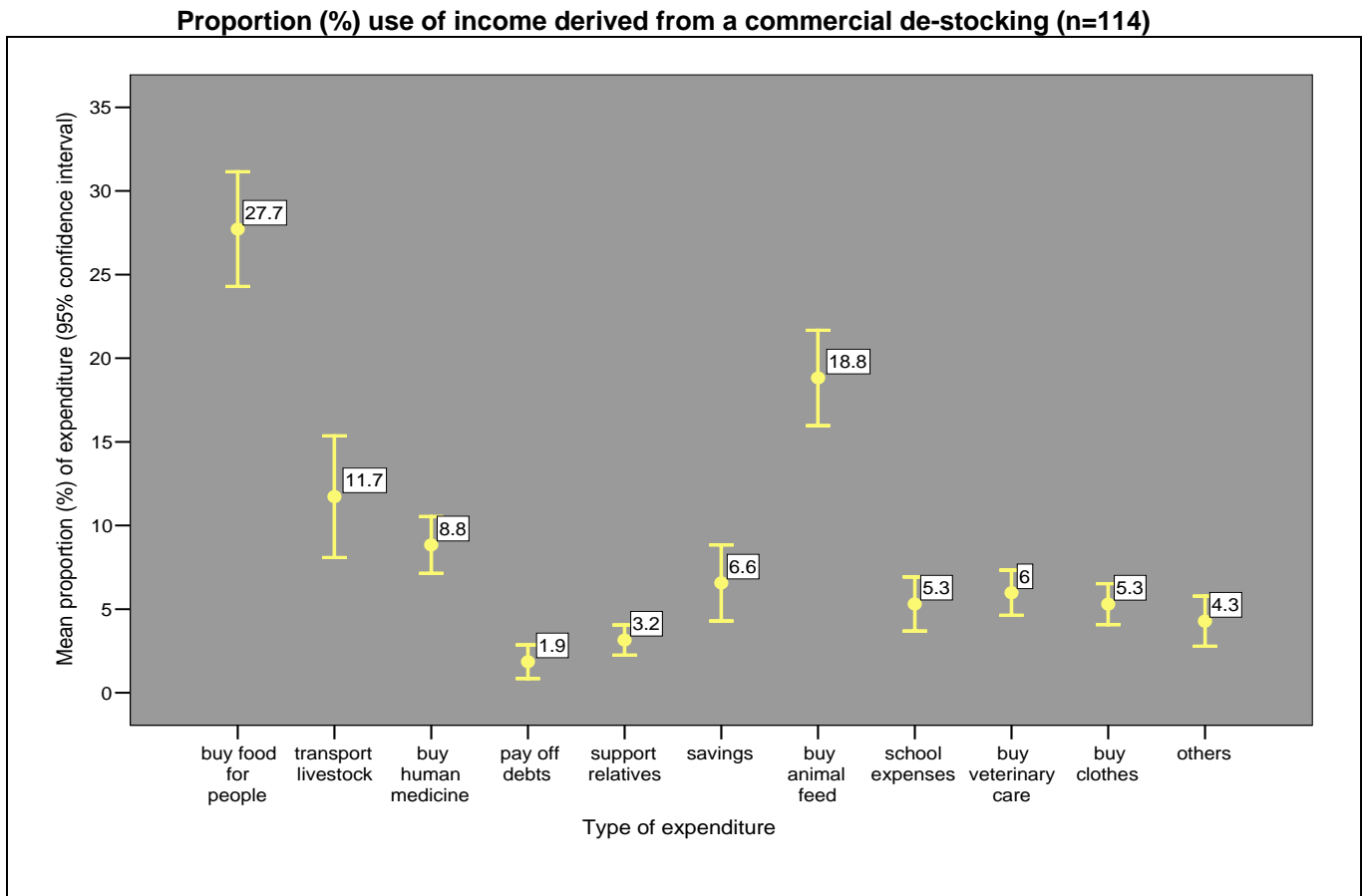
FIGURE 4.6 SCORING UTILIZATION OF MILK



Source: Burns et al 2008

The following example is from an impact assessment of a drought mitigation de-stocking intervention which was carried out in a pastoralist region of Ethiopia. The results are derived from the systematic application of a scoring exercise, and show the utilization of income derived from the de-stocking across 114 participating households.

FIGURE 4.7: SCORING INCOME UTILIZATION



Source: Abebe et al 2008

The results show that a considerable portion of the income was spent on human and animal food, and transporting livestock. Effectively the income earned from this de-stocking intervention allowed people to purchase animal feed and transport some of their remaining livestock to better grazing areas. The income also allowed them to purchase food for human consumption offsetting the food from livestock production that would have been lost during the drought. Expenditures on feed and livestock transport helped preserve people’s livestock asset base, protecting their livelihoods and helping them recover from the drought.

Remember to field test your methods with community members before the assessment – most methods look easy on paper but require fine tuning once you start to use them in the field.

STAGE FIVE: SAMPLING

Your sample size and method will ultimately be determined by the time and resources you have available for the assessment, and decisions and choices will have to be made depending on what level of representation and evidence you hope to achieve.

Broadly speaking, there are three types of sampling method which can be used for a participatory impact assessment:

1. **Convenience Sampling** (go to easily accessible villages)
2. **Purposive Sampling** (go to villages “typical” of the project area)
3. **Random sampling** (put all the names of the project villages in a hat and pick out the number you plan to assess)

Although random sampling is considered to be the most scientific, and convenience sampling the least, each method has its strengths and weaknesses. For example, convenience sampling may save time, but all the selected villages being easily accessible may not be representative of the greater project area (road side bias). Alternatively random sampling may give more truthful results, but it can be costly and time consuming. With purposive sampling, there may be a tendency to go to villages where you think your project worked well, and where the results will show an impact that is not representative of other villages in the project area. One way of minimizing this tendency is to deliberately select equal numbers of good, bad and medium villages.

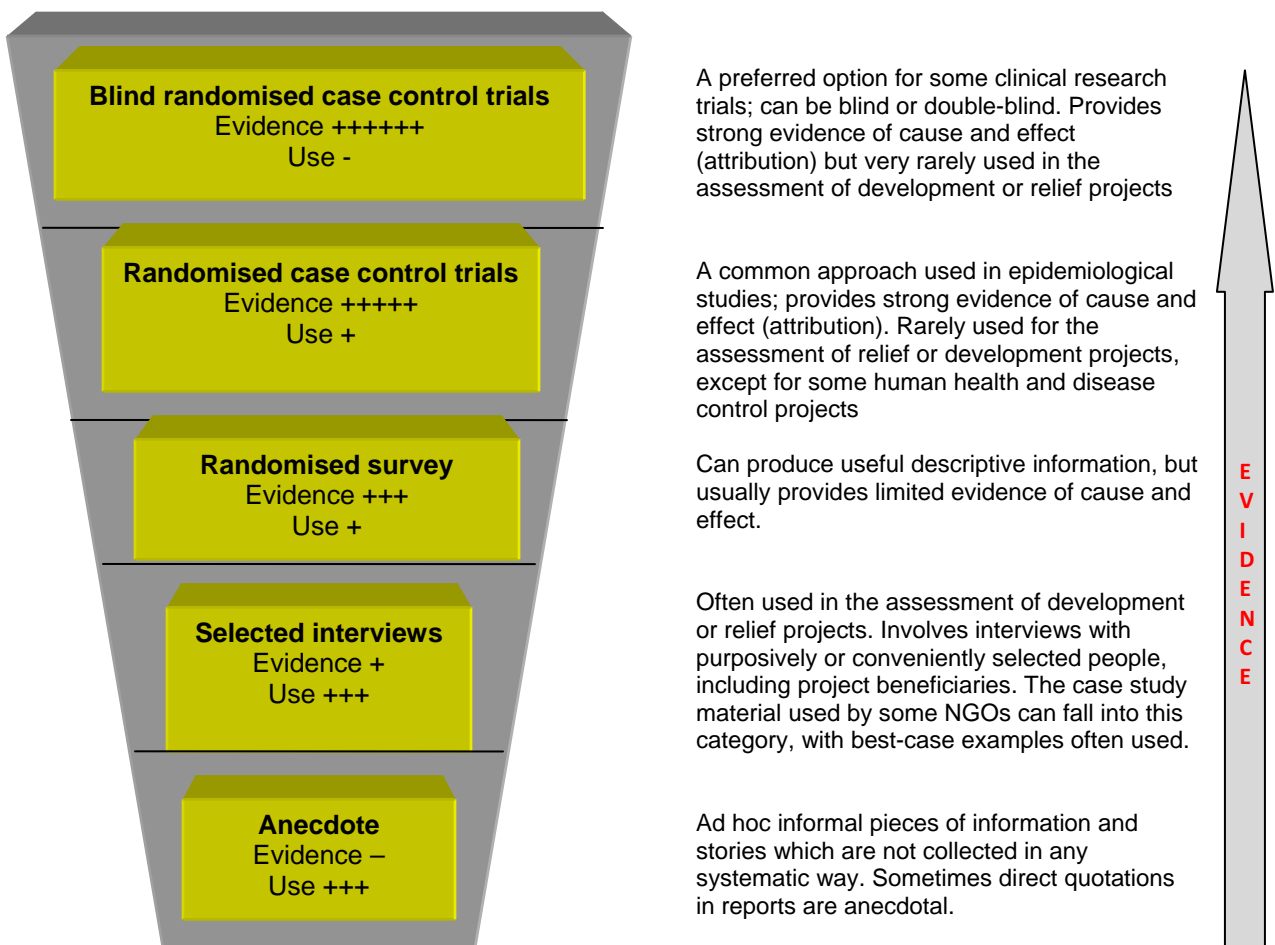
Although, there is no right or wrong answer on sampling method, you do need to consider the end users of the assessment findings. If you wish to influence policy, or publish the findings in an academic journal, then it is important to use random sampling if you want the results to be accepted. If the results are for internal use only, then random sampling is probably not necessary. Although it is not essential to use a random sample, and it is often not practical, if you wish to extrapolate the results to make decisions that will apply to the entire project area, you need to use a random sample. For example, if you implement a project in 50 villages, and you plan on assessing only 10 villages, you would have to randomly select the 10 villages. The only other option would be to assess all 50 villages. If on the other hand you decided to purposively select 10 villages, there is nothing wrong with this but the results would only be applicable to the villages assessed and could not be extrapolated to the other 40 project villages.

Similarly there is no correct answer on the actual sample size. For most project impact assessments, the important thing is to capture the overall trend, and this can usually be done with a smaller sample size. As long as it is done systematically it can be representative. Nevertheless, there are a number of factors that need to be taken into consideration. Your sample size will depend on the type and number of questions you are trying to answer, and the number and type of assessment tools and attribution methods needed to answer these questions (see next section). For example, if you decide to use control groups for attribution, you may be able to get a greater level of evidence with a smaller sample, even though a control group immediately doubles the size of your sampling frame. Again some tools, such as “pair-wise” and “matrix” ranking are extremely time consuming, and will be more suitable for focus group discussions. To use these tools for household interviews would imply reducing your sample size considerably.

You may also need to stratify your sample in order to capture the views of different groups within a project area. When thinking about stratification it is important to refer back to the key questions (Stage One) and only stratify in relation to those questions. For example, if a key question states that the assessment should examine whether impact varied by gender then both men and women should be sampled i.e. stratification by gender. Conversely, if no gender aspect is stated in the key questions there is no need to stratify by gender. Similarly, key questions may ask whether impact varied by wealth group and again, only stratify by wealth if you wish to answer this type of question. These are important considerations because each layer of stratification can have implications in terms of increased time, cost and analytical complexity. Similarly, if a project involves different activities, involving different people, you will need an independent sample for each activity to be assessed.

FIGURE 5.1: EVIDENCE HIERARCHY

A hierarchy of evidence for the assessment of emergency livestock projects



On the hierarchy of evidence diagram developed for emergency livestock projects (figure 5.1), most PIAs should aim to fall in between the second and third highest levels in terms of evidence. The highest level on the scale would not apply to a PIA, as a blind approach could not be reconciled with the principle of participation. The second highest level can and has

been used for PIA, although it tends to be less participatory, and in a humanitarian context, the practical and ethical implications of using a control group would generally exclude this option (see next section). Table 5.1 shows some sampling options that have been used to carry out PIAs. Mostly these have used purposive sampling, although in some cases random sampling has been used for village selection, participant selection, or both.

Table 5.1: Sampling options for impact assessment

Type of sampling	Description	Examples of assessments using this approach fully, or in part
Random (probability sampling)	<ul style="list-style-type: none"> ▪ Based on the principle that any location or informant has an equal chance of being selected relative to any other location or informant ▪ Generally viewed as the most representative type of sampling and therefore, the most rigorous ▪ Allows results from the sample to be extrapolated to the wider project area ▪ Can be used in humanitarian contexts when lists of targeted households are available, and when all selected locations or households are accessible ▪ Sample size(s) are determined using mathematical formulae which include the level of statistical confidence (error) required and estimates of the amount of change expected in the population in question ▪ Tends to be less participatory than other approaches ▪ Randomization can miss key informants i.e. individuals who have particular knowledge about an area or project 	<ul style="list-style-type: none"> ▪ Commercial de-stocking, Ethiopia (Abebe et al, 2008) ▪ Restocking, Kenya (Lotira, 2004)
Purposive (non-probability sampling)	<ul style="list-style-type: none"> ▪ Uses the judgment of community representatives, project staff or the assessors to select representative locations and/or informants ▪ Useful if no sampling frame is available ▪ Results cannot be extrapolated to a wider area ▪ Moderately rigorous if conducted well, and clear criteria for sampling are described and followed ▪ Can include a comparison of impacts in areas judged to be ‘weak’, ‘moderate’ or ‘strong’ in terms of implementation ▪ Can be participatory if community members are involved in selection of assessment sites and informants ▪ Subject to bias, particularly towards more successful project areas or households 	<ul style="list-style-type: none"> ▪ Gokwe Recovery Action, Zimbabwe (Burns & Suji, 2007) ▪ Chical Recovery Action, Niger, (Burns & Suji, 2007) ▪ Pastoralist Survival and Recovery, Niger, (Burns et al, 2008) ▪ Veterinary services, Ethiopia (Admassu et al., 2005) ▪ Feed supplementation (Bekele and Abera, 2008)
Convenience (non-probability sampling)	<ul style="list-style-type: none"> ▪ Easily accessible locations or informants are sampled ▪ The least rigorous sampling option and unlikely to be representative, particularly in larger projects ▪ Commonly used, especially during wet season with poor road access, or in insecure areas 	Various – this type of sampling is commonly used in assessments

Getting numerical data from participatory tools

Directly related to the issue of representativeness and sampling is the systematic application of the participatory impact assessment tools. A fundamental principle of the PIA approach proposed here is that the same tool be applied consistently, using the same indicators, the same number of counters, and framing the questions in exactly the same way. One weakness of participatory methods is that people often only do it once. If consistently applied, even a limited set of results can show agreement or not, as few as 10-15 repetitions may be enough to get reliability. Needless to say, the more repetitions, or the larger the sample size, the more statistically reliable the results will be.

It is also this process of standardizing and repeating the participatory exercises in a systematic way that enables us to derive representative results from qualitative participatory tools. Even though the data may be subjective, it is systematic and therefore scientifically rigorous.

Develop your methods, standardize and repeat

FIGURE 5.2: RELIABILITY AND REPETITION EXAMPLE

“Before” and “After” Scoring to Show Changes in the Prevalence of Disease X in Cattle

1 Repetition		3 Repetitions		6 Repetitions		10 Repetitions	
Before	After	Before	After	Before	After	Before	After
10	4	10	4	10	4	10	4
		10	6	10	6	10	6
		10	5	10	5	10	5
		10	4	10	4	10	4
		10	7	10	7	10	7
		10	4	10	4	10	4
		10	5	10	5	10	5
		10	7	10	7	10	7
		10	8	10	8	10	8
		10	6	10	6	10	6

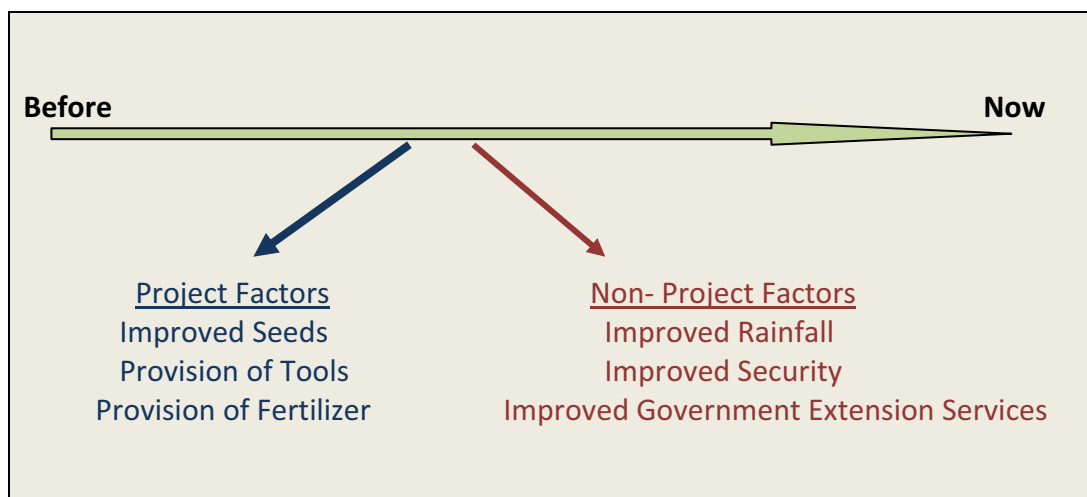
The reliability of the results improves with the number of repetitions. Standardize your methods, and repeat the exercise over and over again to improve confidence

STAGE SIX: ASSESSING PROJECT ATTRIBUTION

In any community or area where a project is implemented, changes will take place over time. Some of these changes may have nothing to do with the project and would have happened regardless of whether or not the project ever existed. Other changes occur as a result of the project, and these changes can be **attributed** to the project.

The assessment of attribution is an important aspect of project assessment that is often overlooked. For example, an organization implements an agricultural recovery project in a food insecure area affected by periodic drought and conflict. After a period of time a survey is carried out and the results show improvements in the food security and nutritional status of the participating community. The assessment concludes that the project was a success. Is this a correct assumption, or might other factors such as rainfall, seasonality, or security have been more important in influencing food security and nutrition outcomes? The objective of assessing attribution is to isolate and contextualize the impact of the project from non-project factors.

FIGURE 6.1: EXAMPLE OF ATTRIBUTION FACTORS



There are two main approaches for assessing project attribution:

1. **Within a project area, assess the relative importance of project and non-project factors.**
2. **Comparison between project and non-project populations within the project area.**

The first approach aims to understand all the project and non-project factors which contributed to changes in the impact indicators identified. These factors should be listed. It also aims to understand the relative importance of these project and non-project factors. Methods such as simple ranking and scoring, or causal diagrams with scoring of causes can be used to measure the relative impact of both project and non-project factors.

The second approach to attribution is the classic scientific approach and involves the use of control populations or groups. In this approach, the ‘treatment’ or ‘intervention’ populations are compared with control populations to determine statistical differences between the two groups, the assumption being that the control group has the same characteristics as the intervention population. The use of controls in participatory impact assessment might include the following:

1. A comparison of areas where the project intervention took place against an area where there was no intervention.
2. A comparison of project and non project participants within the same community.
3. A comparison of different interventions in the same area.

Although a good control can address the problem of attribution, there are a number of practical and ethical issues involved in using control groups, particularly in the context of a humanitarian intervention. Finding two population groups that share the same characteristics can be a challenge, and there is a high probability that the control population receives similar interventions from another agency during the same time period. The use of control groups may also imply doubling or more than doubling the time and resources needed for the assessment. From an ethical perspective, by definition, the use of a control or ‘non-project’ population means that decisions are made to exclude a population from an intervention which raises concerns in a humanitarian context. These concerns would also apply to a staggered control whereby the control group will be assisted during a second phase of an intervention, as there is also a temporal dimension to targeting exclusion. The decision to use or not to use a control group will ultimately have to be determined by weighing these practical and ethical considerations.

Table 6.1 provides a summary of some practical and ethical concerns of using control groups identified by participants during a participatory impact assessment workshop in Addis Ababa in 2006. The workshop was held as part of a Bill & Melinda Gates funded impact assessment initiative involving six international NGOs. The workshop participants included project staff, program managers and country representatives of the participating NGOs.

Table 6.1 Some practical and ethical concerns with using control groups

<p>Identification of a control population with similar characteristics</p> <p>Willingness of comparative group to participate openly and honestly – if incentives are given for participation, is this really a true control group?</p> <p>How can you be sure that the control group will not receive assistance from another source?</p> <p>Potential security risk to NGO staff for excluding the control group from the project</p> <p>If a control group is selected from non project participants in the same community, how can you be sure that they do not indirectly benefit from the project?</p> <p>Increased cost and time of including a control group, staff, vehicles*</p> <p>Exclusion of one community goes against the humanitarian imperative and the principles of participation</p> <p>It’s unethical to use human placebos in a humanitarian context – good research protocol should not take precedence over the provision of assistance</p> <p>The use of a control group is disrespectful of people’s time</p> <p>Raising expectations of the control group – will the information be reliable?</p> <p>The extra resources required to include a control group should be used to assist the excluded community*</p> <p>Using controls could potentially create tensions or even fuel conflict between recipient and non-recipient communities</p>

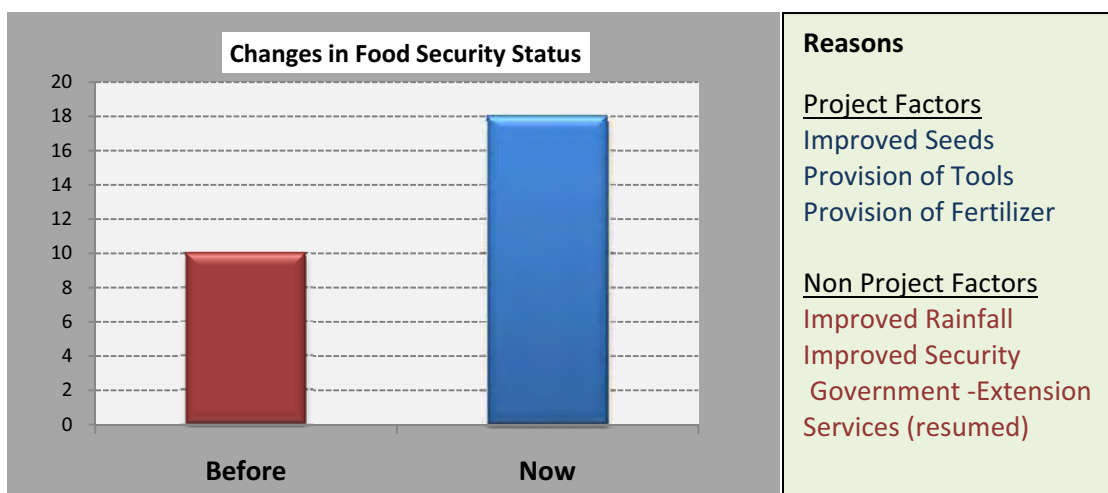
*This concern may be partly offset by the fact that a good control may mean that you get the same or a greater level of evidence from a smaller sample

Assessing Project and Non Project Factors

Due to these practical and ethical concerns, most impact assessments of humanitarian projects will use the first approach to assessing attribution by comparing the relative importance of project and non project factors. This can be done by prioritizing, ranking, or scoring the different factors that contributed to any positive or negative changes that took place in the project area.

Figure 6.2 shows (fictitious) results of a scoring exercise to assess changes in food security following an agricultural recovery project in a post conflict setting. The results show a positive change in food security status, and the participants have listed the key reasons effecting this change.

FIGURE 6.2 HYPOTHETICAL EXAMPLE OF RESULTS FROM AN IMPACT SCORING EXERCISE



One way of attributing impact to the project activities would be to ask the participants to rank or score the different contributing factors in order of importance. The results may look something like this:

Table 6.2 Attribution by Simple Ranking/Scoring

Factor	Rank	Score
Improved Rainfall	1 st	33
Improved Security	2 nd	26
Improved Seeds	3 rd	19
Government Extension Services	4 th	12
Provision of Fertilizer	5 th	8
Provision of Tools	6 th	2

The results show that the two most important factors contributing towards an improvement in food security in fact had nothing to do with the project. However, they also show that the project had a considerable impact in contributing towards an overall improvement in Food Security. From the scoring exercise you might assign the project related factors a 29% relative contribution towards improved food security.

Ranking as an Attribution Method

Example:

- A PIA of an animal health project visits 10/30 locations with a project animal health worker
- Scoring in each location indicates improved animal health during the project period
- Simple ranking was used to understand the factors contributing to this change

Table 6.3 Ranking of project and non project factors – animal health project

Factor	Median Rank
Increase usage of modern veterinary drugs due to attitudinal change of the community for modern veterinary medicine	1 st
Biannual vaccination for communicable disease by Community Animal Health Workers	2 nd
Good rain and better availability of pasture (during 2002)	3 rd
Reduced herd mobility and herd mixing due to increasing settlement	4 th

N=10 informant groups; there was a high level of agreement between the groups (W=0.75; p<0.001).

Source: Admassu et al, 2005



Field testing PIA tools in Malawi

Matrix scoring as an attribution method

Matrix scoring is another useful way of comparing project and non project factors. The photograph and corresponding table below illustrate how matrix scoring was used during a PIA of a community based animal health project. The exercise was used to compare different service providers including Community Animal Health Workers (CAHW) against different indicators of service provision. These included indicators such as convenience, reliability, affordability, effectiveness, and trust.

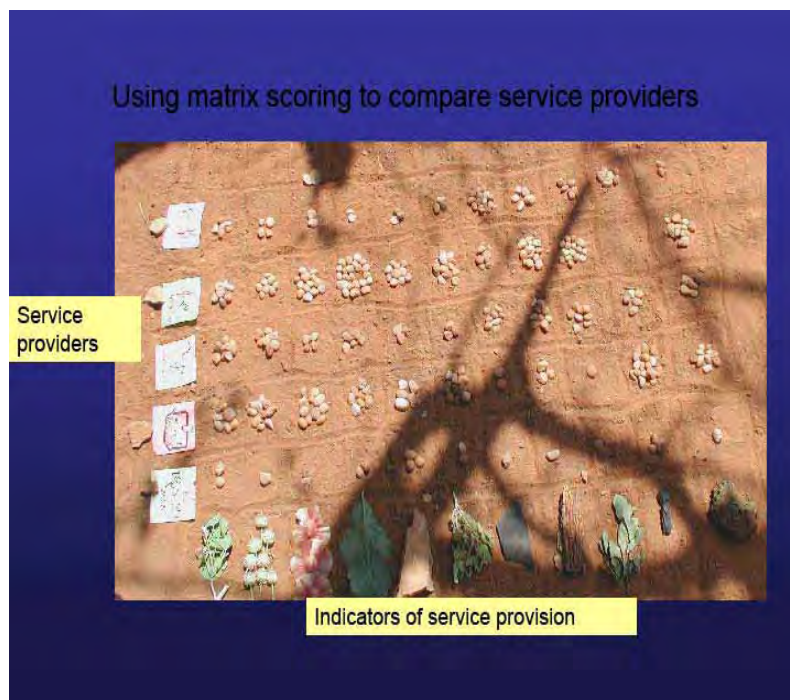


FIGURE 6.3 USING MATRIX SCORING TO COMPARE SERVICE PROVISION

































































Comparison of service providers

Indicator	Median score for animal health service provider				
	Government veterinary service	Drug dealers (black market)	Traditional medicine	CAHWs	Others
'Service is near to us' ($W=0.69^{***}$)	11	0	0	15	0
'Service always has medicines available' ($W=0.94^{***}$)	2	8	4	14	1
'The quality of medicines is good' ($W=0.66^{***}$)	7	4	4	12	0
'Our animals usually recover if we use this service' ($W=0.73^{***}$)	1	5	4	19	2
'We get good advice from the service provider' ($W=0.62^{***}$)	1	7	7	12	4
'This service can treat all our animal health problems' ($W=0.69^{***}$)	5	4	9	11	0
'This service is affordable' ($W=0.76^{***}$)	0	6	4	18	2
'We trust this service provider' ($W=0.62^{***}$)	0	7	4	16	2
'The community supports this service' ($W=0.54^{**}$)	0	3	7	15	0
Increase in service usage ($W=0.62^{***}$)	3	0	3	20	2

Source: Admassu et al, 2005

Figure 6.4 shows the use of matrix scoring in impact assessment: comparison of livestock and other interventions during a drought in southern Ethiopia (from Abebe et al., 2008)

FIGURE 6.4 MATRIX SCORING COMPARING DIFFERENT DROUGHT INTERVENTIONS

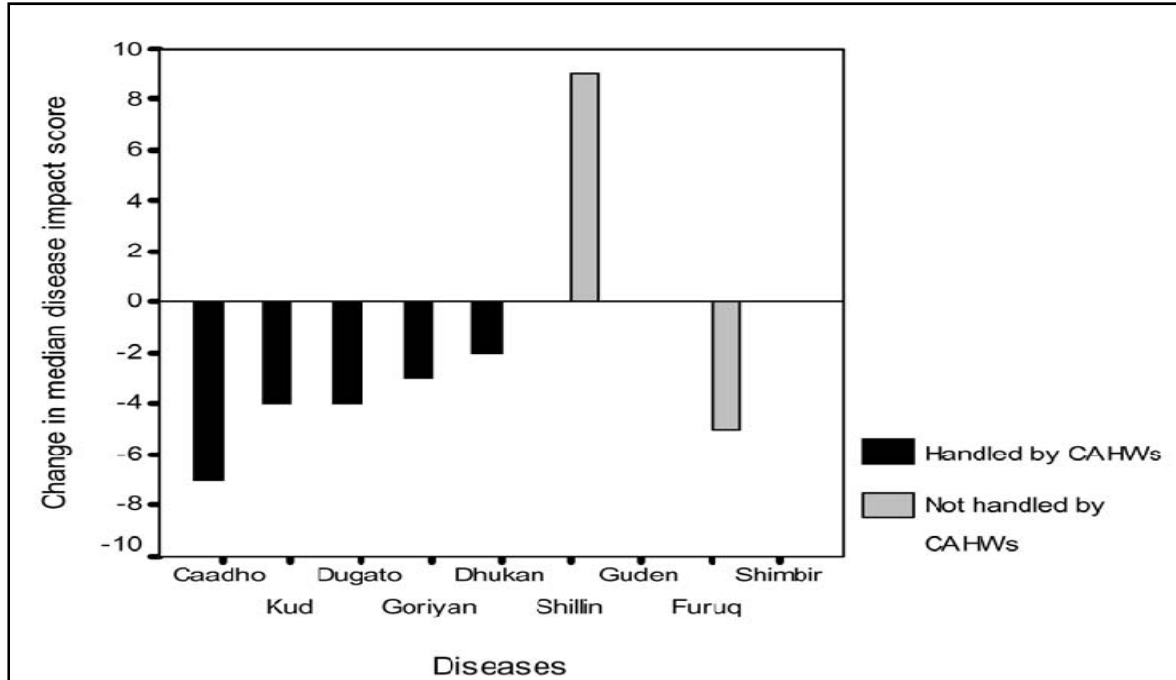
Indicators	Mean scores (95% CI) for interventions							
	Commercial de-stocking	Veterinary support	Animal feed	Food aid	Water supply	Labor (Safety net)	Credit	Others
<i>“Helps us to cope with the effect of drought”</i>	 9.1 (8.5, 9.7)	 3.5 (3.2, 3.9)	 5.7 (5.1, 6.2)	 6.9 (6.5, 7.4)	 3.0 (2.4, 3.6)	 0.8 (0.5, 1.1)	 0.5 (0.2, 0.8)	 0.4 (0.2, 0.7)
<i>“Helps fast recovery and rebuilding herd”</i>	 11.1 (10.5, 11.7)	 4.4 (3.9, 4.9)	 5.7 (5.0, 6.3)	 4.9 (4.4, 5.6)	 1.9 (1.5, 2.4)	 0.9 (0.5, 1.4)	 0.6 (0.1, 1.1)	 0.4 (0.1, 0.7)
<i>“Helps the livestock to survive”</i>	 10.3 (9.5, 11.2)	 4.9 (4.4, 5.4)	 8.9 (8.1, 9.7)	 2.3 (1.8, 2.8)	 2.8 (2.2, 3.5)	 0.2 (0.1, 0.4)	 0.3 (0.1, 0.6)	 0.2 (0.0, 0.4)
<i>“Saves human life better”</i>	 9.8 (8.9, 10.6)	 2.4 (1.9, 2.8)	 3.7 (3.1, 4.3)	 8.8 (8.1, 9.6)	 3.6 (2.9, 4.3)	 0.9 (0.5, 1.3)	 0.5 (0.2, 0.9)	 0.3 (0.1, 0.5)
<i>“Benefits the poor most”</i>	 7.6 (6.7, 8.6)	 1.9 (1.6, 2.3)	 3.2 (2.5, 3.8)	 11.0 (10.1, 11.9)	 3.7 (2.8, 4.3)	 1.6 (0.9, 2.2)	 0.7 (0.3, 1.1)	 0.5 (0.1, 0.8)
<i>“Socially and culturally accepted”</i>	 11.5 (10.6, 12.4)	 5.1 (4.7, 5.6)	 5.8 (5.1, 6.4)	 3.4 (2.8, 3.9)	 2.6 (2.1, 3.2)	 0.9 (0.5, 1.4)	 0.3 (0.1, 0.5)	 0.3 (0.1, 0.5)
<i>“Timely and available”</i>	 8.4 (7.8, 9.0)	 3.3 (2.9, 3.7)	 4.3 (3.9, 4.6)	 8.5 (7.9, 9.1)	 3.5 (2.8, 4.1)	 1.2 (0.7, 1.7)	 0.5 (0.2, 0.8)	 0.3 (0.1, 0.5)
Overall preference	 10.6 (9.9, 11.2)	 4.2 (3.8, 4.6)	 6.2 (5.5, 6.9)	 4.7 (4.1, 5.2)	 2.6 (2.1, 3.2)	 1.0 (0.5, 1.5)	 0.4 (0.1, 0.6)	 0.3 (0.1, 0.6)

n = 114 households; results derived from matrix scoring of each indicator using 30 stones; mean scores (95% CI) are shown in each cell. The black dots represent the stones used during the matrix scoring.

Using simple controls to assess attribution

Sometimes it is possible to use a control that allows for comparisons between an intervention and non-intervention group without the ethical concerns that typically apply with regards to control groups in a humanitarian context. The example below shows how a simple control was used in scoring disease amongst livestock handled by community animal health workers (CAHW) and livestock that were not.

FIGURE 6.5 CAMEL DISEASE IMPACT SCORING



Source: Admassu et al 2005

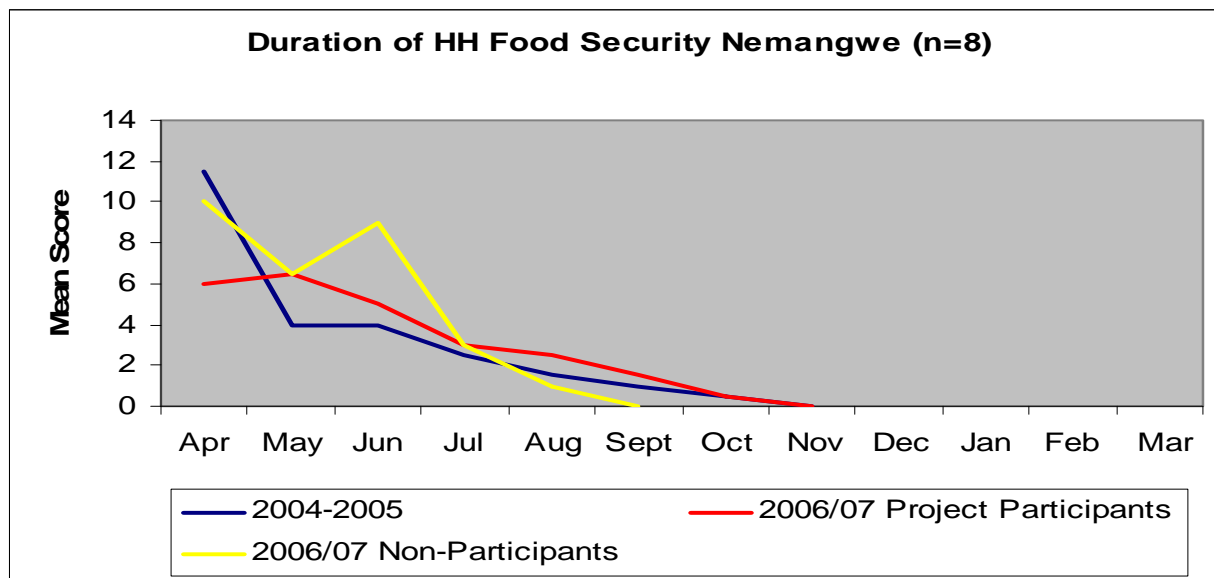
A similar type of control was used below to compare mortality rates in livestock that received supplementary feed with those that did not during a recent drought in Ethiopia (Bekele, 2008):

Table 6.6 Comparison of livestock mortality rates (Source: Bekele, 2008)

Location/Group	Mortality
Bulbul area – affected by moderate drought - Programme started on 15th March 2008	
Unfed cattle moved to grazing areas	108/425 (25.4%)
Cows fed using SC-US feed	13/161 (8.1%)
Cows fed using private feed	56/151 (37.1%)
Web area – affected by severe drought - Programme started 9th February 2008	
Unfed cattle moved to grazing areas	139/407 (34.2%)
Cows fed using SC-US feed	49/231 (21.2%)
Cows fed using private feed	142/419 (33.8%)

Comparisons in the number of months of food security were also done between project and non-project participants attending a focus group discussion during assessments in Zimbabwe (Figure 6.6). In situations where non project participants attend focus groups, and are willing to provide comparisons there is a possibility of using them as a spontaneous control group. However, the fact that they were excluded from the intervention raises questions about their comparability.

FIGURE 6.6 COMPARISONS BETWEEN PROJECT AND NON PROJECT PARTICIPANTS



The data was collected using twenty five counters which were used to represent a households' post harvest cereal balance. The counters were then distributed along a calendar to indicate utilization up until depletion. The data was collected during focus group discussions, and the distribution of the counters was agreed upon by consensus of participants from each group. (Source: Burns and Suji 2007)

Although some of the attributions methods described are certainly more rigorous than others, they may require greater time and resources, and may not be practical. As with sampling, the type of attribution method used will be a judgment call in trying to balance scientific rigor with the practical realities of carrying out assessments in a challenging context. The important thing to remember is that whichever method you decide to use, it will be better than not trying to attribute impact at all.

STAGE SEVEN: TRIANGULATION

Triangulation is a crucial stage of the assessment, and involves the use of other sources of information to cross-check the results from the participatory exercises. A key source for triangulation is secondary data, which may include previous studies and reports, and external surveys done by the government, other organizations or research institutes may also provide useful data for triangulation.

However, for most projects the key source of secondary information is the project's own process and implementation monitoring (M&E) data.

For example, if the results of the impact assessment show that there has been a reduction in disease patterns.

- Did the project actually provide the specific types of drugs or vaccines to treat or prevent the disease in question?
- Did the project provide sufficient quantities of drugs or vaccine which might account for these changes?

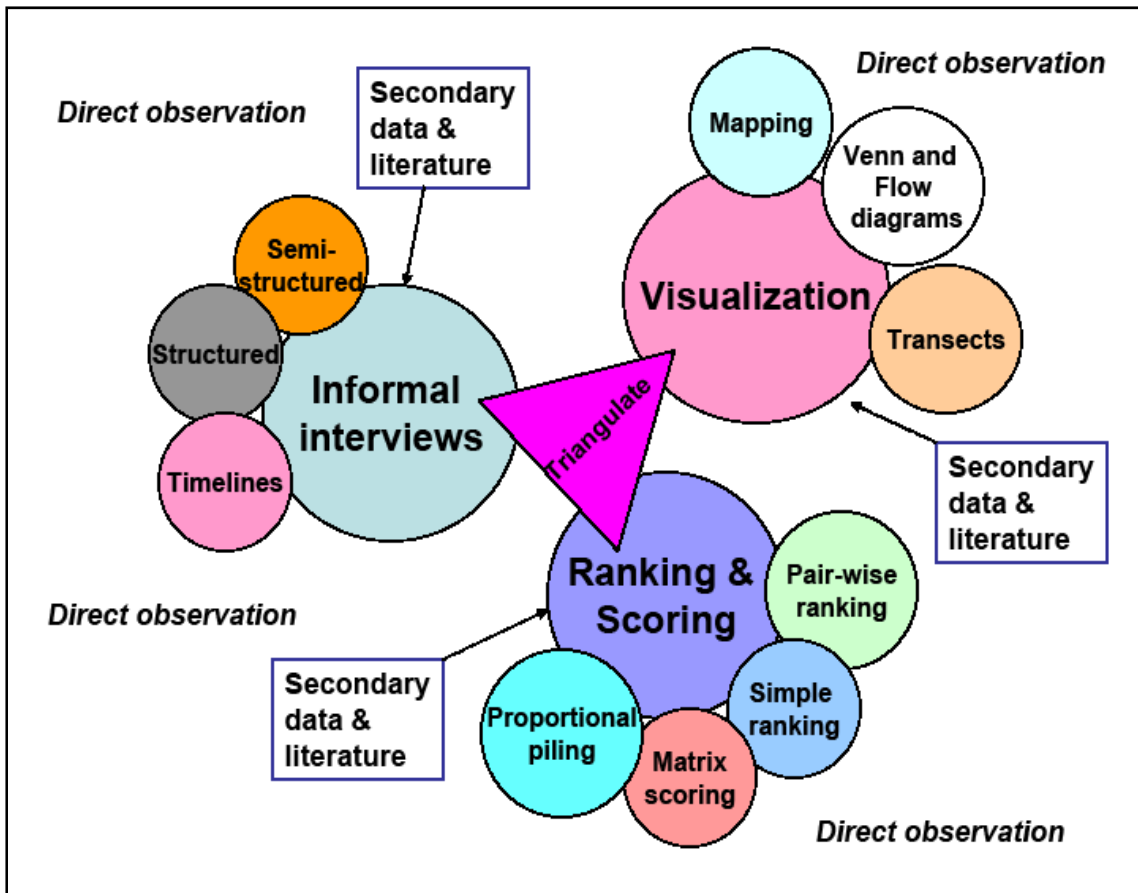
This information should be available from the projects process monitoring reports.

If any of the diseases in question are part of an official disease control program, is there additional information available from these programs, such as disease surveillance data?

Another way to triangulate or validate your data is to use different participatory methods to measure the same indicator, and then compare the results. If the results are similar then they are more likely to be accurate. Alternatively, you can look for trends and patterns from the results of different exercises. For example, if you were to do a before and after scoring of food sources, income and expenditure, the results from the first exercise may show an increase in cereal production, the second may show an increase in the proportion of household income from the sale of millet, and the expenditure exercise may show a relative reduction in the amount of household income spent on millet purchases. As long as you have asked the participants to explain these changes, and the responses support the results of the participatory exercises, you can be fairly confident that the results from all three exercises are consistent with each other. Direct observation can also be used to triangulate data. The following photos from an impact assessment report show before and after photos of a project garden site illustrating changes in crop production.



FIGURE 7.1 TRIANGULATING DIFFERENT SOURCES OF INFORMATION



STAGE EIGHT: FEEDBACK AND VALIDATION

This is the final stage of the assessment and involves the presentation of the findings back to the community. If a local partner such as a Community Based Organization (CBO) is involved in the project, they should receive a copy of the results, and later the final report. This stage is the final opportunity for the community and project participants to verify that the results are correct. If there is to be a second phase of the project, or if the same project activities are to be implemented in another community, a “feedback” workshop can be held. This is a good opportunity to plan further work to improve the project. Alternatively a number of focus group exercises can be carried out with the objective of sharing the results with the participating communities.

WHEN TO DO AN IMPACT ASSESSMENT

The timing of an impact assessment will invariably have implications on the results, and an important question to ask is when to carry out an impact exercise. Many livelihoods projects have a delayed impact, and in a humanitarian context, where funding and project cycles are typically short, the project will end before the true impact of a project has been realized. Certain interventions will have a more or less immediate impact. For example, loans from village savings groups may be immediately invested in income generating activities, which turn an immediate profit which is then utilized on livelihoods investments. Similarly cash from a de-stocking intervention may be invested in food, fodder and veterinary drugs in a very short period of time. In contrast, most agricultural interventions will require at least one crop cycle to achieve any impact, and training projects may take even longer. In some cases, project participants may have expectations of the project that will take years to realize. For example, participants in a sheep re-stocking project in Niger hoped to eventually save enough income from the sale of the offspring of the project sheep to purchase a young cow, with the expectation that this cow would start producing milk, which could be fed to their children, and the surplus sold for cash which would be re-invested in more cattle. The participants suggested that a good long term indicator of project impact would be an increase in cattle ownership. However, the actual impact assessment took place long before any of the participants had saved up enough money to purchase a cow, and so an increase in cattle ownership would have been a meaningless indicator of impact. Alternatively the participants proposed that the number of ewes born from the project sheep should be used as a proxy indicator of project impact. In cases such as these, it is best to use short term, or proxy indicators of impact. As long as these are identified by project participants, they can still be considered as community-identified indicators. Similarly, some interventions will continue to have an impact for a long period of time, whereas the impact from other projects is only designed to have a short term life saving impact. This needs to be considered when designing an assessment, and when interpreting the results.

It is useful to ask project participants when is the best time to do an assessment, and try to do it during the time period they suggest. Although this may not always be practical, community members will have the best idea as to when they expect the project to achieve an impact against the indicators they have identified. There are also times of the year that may be inappropriate to do an assessment as people are involved in cultural, religious or agricultural activities that will take priority, and community members can advise on what periods to avoid. Even if people do agree to participate in an assessment during busy periods, it is only natural that their responses will be rushed and this will compromise the quality of the results. In any case, from a purely ethical perspective carrying out assessments during busy periods should be avoided.

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Feinstein
InternationalCenter

Feinstein International Center

Tufts University

200 Boston Ave., Suite 4800

Medford, MA 02155

USA

tel: +1 617.627.3423

fax: +1 617.627.3428

fic.tufts.edu